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Pacific
Northwest
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June 1985



Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington

Part 2 – Appendices

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Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington

Part 2 – Appendices

E. Reade Brown
Technical Editor

U.S. Department of Agriculture
Forest Service
Pacific Northwest Region

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Appendix 1

460 wildlife species found west of the crest of the Cascade Range in Oregon and Washington listed in phylogenetic sequence by common and scientific names

Appendix 1 lists in phylogenetic order the common and scientific names of the 460 species of wildlife found west of the crest of the Cascade Range in Oregon and Washington. The computer letter code for each species and the life form group to which that species was assigned also are shown. Excluded were strictly pelagic species that are rarely found in westside habitats.

All species were assigned to one of four categories as follows:

Unmarked — Species whose habitat requirements are such that forestry practices will impact their reproduction, distribution or forage base at the site of the forest manipulation.

* Species whose habitat requirements are such that impacts of forestry practices on their distribution or forage base will occur at sites removed from the immediate area of forest manipulation.

** Species whose habitat requirements are such that there is only a slight chance of forestry related impacts.

*** Casual, very rare species, or those whose occurrence status is undetermined at this time.

Species in the two and three asterisk categories usually are not included in other appendices although some of them are discussed under specialized habitats.

Order & Family Letter Code	Life Form	Common Name	Scientific Name	Order & Family Letter Code	Life Form	Common Name	Scientific Name
AMPHIBIANS √				ANURA:			
CAUDATA:				Bufonidae — True Toads			
Ambystomatidae — Mole Salamanders				BUBO	2	western toad	<i>Bufo boreas</i>
AMGR	2	northwestern salamander	<i>Ambystoma gracile</i>	Hylidae — Treefrogs			
AMMA	2	long-toed salamander	<i>Ambystoma macrodactylum</i>	HYRE	2	Pacific treefrog	<i>Hyla regilla</i>
DICO	1	Cope's giant salamander	<i>Dicamptodon copei</i>	Leiopelmatidae — Bell Toads			
DIEN	2	Pacific giant salamander	<i>Dicamptodon ensatus</i>	ASTR	2	tailed frog	<i>Ascaphus truei</i>
RHOL	2	Olympic salamander	<i>Rhyacotriton olympicus</i>	Ranidae — True Frogs			
Plethodontidae — Lungless Salamanders				RAAU	2	red-legged frog	<i>Rana aurora</i>
ANFE	5	clouded salamander	<i>Aneides ferreus</i>	RABO	2	foothill yellow-legged frog	<i>Rana boylei</i>
ANFL	5	black salamander	<i>Aneides flavipunctatus</i>	RANCA	2	Cascade frog	<i>Rana cascadae</i>
BAAT	5	California slender salamander	<i>Batrachoseps attenuatus</i>	RACAT	1	bullfrog	<i>Rana catesbeiana</i>
BAWR	5	Oregon slender salamander	<i>Batrachoseps wrighti</i>	RAPR	2	spotted frog	<i>Rana pretiosa</i>
ENES	5	Ensatina	<i>Ensatina eschscholtzi</i>	REPTILES √			
PLDU	3	Dunn's salamander	<i>Plethodon dunni</i>	TESTUDINES:			
PLEL	4	Del Norte salamander	<i>Plethodon elongatus</i>	Emydidae — Water and Box Turtles			
PLLA	4	Larch Mountain salamander	<i>Plethodon larselli</i>	CHPI	3	painted turtle	<i>Chrysemys picta</i>
PLEST	4	Siskiyou Mountains salamander	<i>Plethodon stormi</i>	CLMA	3	western pond turtle	<i>Clemmys marmorata</i>
PLVA	3	Van Dyke's salamander	<i>Plethodon vandykei</i>	SQUAMATA: (suborder Lacertilia)			
PLVE	5	western redback salamander	<i>Plethodon vehiculum</i>	Anguidae — Anguids			
Salamandridae — Newts				ELCO	5	northern alligator lizard	<i>Elgaria coerulea</i>
TAGR	2	roughskin newt	<i>Taricha granulosa</i>	ELMU	5	southern alligator lizard	<i>Elgaria multicarinata</i>
				Iguanidae — Iguanids			
				PHDO	5	short-horned lizard	<i>Phrynosoma douglassi</i> **
				SCEGR	5	sagebrush lizard	<i>Sceloporus graciosus</i>
				SCOC	5	western fence lizard	<i>Sceloporus occidentalis</i>

√ After Nussbaum et al. 1983.

Order & Family Letter Code	Life Form	Common Name	Scientific Name
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Order & Family Letter Code	Life Form	Common Name	Scientific Name
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Scincidae — Skinks			
EUSK	3	western skink	<i>Eumeces skiltonianus</i>
SQUAMATA: (suborder Serpentes)			
Boidae — Boas			
CHBO	5	rubber boa	<i>Charina bottae</i>
Colubridae — Colubrid Snakes			
COLCO	5	racer	<i>Coluber constrictor</i>
CONTE	5	sharp-tail snake	<i>Contia tenuis</i>
DIPU	5	ring-neck snake	<i>Diadophis punctatus</i>
LAGE	5	common kingsnake	<i>Lampropeltis getulus</i>
LAZO	5	California mountain kingsnake	<i>Lampropeltis zonata</i>
MATA	5	striped whipsnake	<i>Masticophis taeniatus**</i>
PIME	5	gopher snake	<i>Pituophis melanoleucus</i>
THCO	3	western aquatic garter snake	<i>Thamnophis couchi</i>
THEL	5	western terrestrial garter snake	<i>Thamnophis elegans</i>
THOR	5	northwestern garter snake	<i>Thamnophis ordinoides</i>
THSI	3	common garter snake	<i>Thamnophis sirtalis</i>
Viperidae — Pit Vipers			
CRVI	5	western rattlesnake	<i>Crotalus viridis</i>
BIRDS ^{2/}			
GAVIIFORMES:			
Gaviidae — Loons			
GAST	3	red-throated loon	<i>Gavia stellata**</i>
GAAR	3	Arctic loon	<i>Gavia arctica**</i>
GAIM	3	common loon	<i>Gavia immer</i>
GAAD	3	yellow-billed loon	<i>Gavia adamsii***</i>
PODICIPEDIFORMES:			
Podicipedidae — Grebes			
POPO	3	pied-billed grebe	<i>Podilymbus podiceps</i>
POAU	3	horned grebe	<i>Podiceps auritus*</i>
PODGR	3	red-necked grebe	<i>Podiceps grisegena*</i>
PODNI	3	eared grebe	<i>Podiceps nigricollis*</i>
AEOC	3	western grebe	<i>Aechmophorus occidentalis</i>
PROCELLARIIFORMES:			
Hydrobatidae — Storm Petrels			
OCFU	16	fork-tailed storm-petrel	<i>Oceanodroma furcata**</i>
OCLE	16	Leach's storm-petrel	<i>Oceanodroma leucorhoa**</i>

PELECANIFORMES:			
Pelecanidae — Pelicans			
PEER	3	American white pelican	<i>Pelecanus erythrorhynchos**</i>
PEOC	3	brown pelican	<i>Pelecanus occidentalis**</i>
Phalacrocoracidae — Cormorants			
PHAU	3	double-crested cormorant	<i>Phalacrocorax auritus</i>
PHPEN	3	Brandt's cormorant	<i>Phalacrocorax penicillatus**</i>
PHPEL	3	pelagic cormorant	<i>Phalacrocorax pelagicus**</i>
CICONIIFORMES:			
Ardeidae — Herons and Bitterns			
BOLE	3	American bittern	<i>Botaurus lentiginosus</i>
IXEX	3	least bittern	<i>Ixobrychus exilis***</i>
ARHE	12	great blue heron	<i>Ardea herodias</i>
CASAL	7	great egret	<i>Casmerodius albus</i>
BUIB	7	cattle egret	<i>Bubulcus ibis**</i>
BUST	7	green-backed heron	<i>Butorides striatus</i>
NYNY	7	black-crowned night-heron	<i>Nycticorax nycticorax</i>
ANSERIFORMES:			
Anatidae — Swans, Geese, and Ducks			
CYCO	3	tundra swan	<i>Cygnus columbianus</i>
CYBU	3	trumpeter swan	<i>Cygnus buccinator</i>
ANAL	3	greater white-fronted goose	<i>Anser albifrons*</i>
CHCA	3	snow goose	<i>Chen caerulescens*</i>
BRBE	3	brant	<i>Branta bernicla</i>
BRCA	3	Canada goose	<i>Branta canadensis</i>
AISP	14	wood duck	<i>Aix sponsa</i>
ANCR	3	green-winged teal	<i>Anas crecca</i>
ANPL	3	mallard	<i>Anas platyrhynchos</i>
ANAC	3	northern pintail	<i>Anas acuta</i>
ANDI	3	blue-winged teal	<i>Anas discors</i>
ANCY	3	cinnamon teal	<i>Anas cyanoptera</i>
ANCL	3	northern shoveler	<i>Anas clypeata</i>
ANST	3	gadwall	<i>Anas strepera</i>
ANPE	3	Eurasian wigeon	<i>Anas penelope</i>
ANAAM	3	American wigeon	<i>Anas americana</i>
AYVA	3	canvasback	<i>Aythya valisineria*</i>
AYAM	3	redhead	<i>Aythya americana*</i>
AYCO	3	ring-necked duck	<i>Aythya collaris</i>
AYMA	3	greater scaup	<i>Aythya marila*</i>
AYAF	3	lesser scaup	<i>Aythya affinis*</i>

^{2/} After American Ornithologist Union 1957, 1982.

Order & Family Letter Code	Life Form	Common Name	Scientific Name	Order & Family Letter Code	Life Form	Common Name	Scientific Name
HIHI	3	harlequin duck	<i>Histrionicus histrionicus</i>	CACAL	5	California quail	<i>Callipepla californica</i>
CLHY	3	oldsquaw	<i>Clangula hyemalis</i> *	ORPI	5	mountain quail	<i>Oreortyx pictus</i>
MENI	3	black scoter	<i>Melanitta nigra</i> ***	GRUIFORMES:			
MEPE	3	surf scoter	<i>Melanitta perspicillata</i> **	Rallidae — Rails, Gallinules, and Coots			
MEFU	3	white-winged scoter	<i>Melanitta fusca</i> **	RALI	3	Virginia rail	<i>Rallus limicola</i>
BUCL	14	common goldeneye	<i>Bucephala clangula</i> *	PORCA	3	sora	<i>Porzana carolina</i>
BUIS	14	Barrow's goldeneye	<i>Bucephala islandica</i>	FUAM	3	American coot	<i>Fulica americana</i>
BUAL	14	bufflehead	<i>Bucephala albeola</i>	Gruidae — Cranes			
LOCUC	14	hooded merganser	<i>Lophodytes cucullatus</i>	GRCA	3	sandhill crane	<i>Grus canadensis</i>
MERME	14	common merganser	<i>Mergus merganser</i>	CHARADRIIFORMES:			
MESE	3	red-breasted merganser	<i>Mergus serrator</i> **	Charadriidae — Plovers			
OXJA	3	ruddy duck	<i>Oxyura jamaicensis</i> *	PLSQ	5	black-bellied plover	<i>Pluvialis squatarola</i> *
FALCONIFORMES:				PLDO	5	lesser golden-plover	<i>Pluvialis dominica</i> *
Cathartidae — American Vultures				CHAL	3	snowy plover	<i>Charadrius alexandrinus</i> *
CAAU	4	turkey vulture	<i>Cathartes aura</i>	CHSE	3	semipalmated plover	<i>Charadrius semipalmatus</i> *
Accipitridae — Ospreys, Hawks, Old World Vultures, and Harriers				CHVO	3	killdeer	<i>Charadrius vociferus</i>
PAHA	12	osprey	<i>Pandion haliaetus</i>	Haematopodidae — Oystercatchers			
ELCA	11	black-shouldered kite	<i>Elanus caeruleus</i>	HABA	3	American black oystercatcher	<i>Haematopus bachmani</i> **
HALE	12	bald eagle	<i>Haliaeetus leucocephalus</i>	Scolopacidae — Woodcock, Snipe, and Sandpipers			
CICY	5	northern harrier	<i>Circus cyaneus</i>	TRME	3	greater yellowlegs	<i>Tringa melanoleuca</i> *
ACST	11	sharp-shinned hawk	<i>Accipiter striatus</i>	TRFL	3	lesser yellowlegs	<i>Tringa flavipes</i> *
ACCO	11	Cooper's hawk	<i>Accipiter cooperii</i>	TRSO	7	solitary sandpiper	<i>Tringa solitaria</i> *
ACGE	11	northern goshawk	<i>Accipiter gentilis</i>	CASE	3	willet	<i>Catoptrophorus semipalmatus</i> *
BULI	12	red-shouldered hawk	<i>Buteo lineatus</i>	HEIN	3	wandering tattler	<i>Heteroscelus incanus</i> *
BUSW	7	Swainson's hawk	<i>Buteo swainsoni</i> ***	ACMA	3	spotted sandpiper	<i>Actitis macularia</i>
BUJA	12	red-tailed hawk	<i>Buteo jamaicensis</i>	NUPH	5	whimbrel	<i>Numenius phaeopus</i> *
BULA	5	rough-legged hawk	<i>Buteo lagopus</i>	NUAM	3	long-billed curlew	<i>Numenius americanus</i> *
AQCH	4	golden eagle	<i>Aquila chrysaetos</i>	LIFE	5	marbled godwit	<i>Limosa fedoa</i> *
Falconidae — Falcons				AREIN	5	ruddy turnstone	<i>Arenaria interpres</i> *
FASP	14	American kestrel	<i>Falco sparverius</i>	ARME	3	black turnstone	<i>Arenaria melanocephala</i> *
FACO	11	merlin	<i>Falco columbarius</i>	APVI	5	surfbird	<i>Aphriza virgata</i>
FAPE	4	peregrine falcon	<i>Falco peregrinus</i>	CACANU	5	red knot	<i>Calidris canutus</i> *
FARU	4	gyrfalcon	<i>Falco rusticolus</i>	CALAL	3	sanderling	<i>Calidris alba</i> *
FAME	4	prairie falcon	<i>Falco mexicanus</i>	CALPU	3	semipalmated sandpiper	<i>Calidris pusilla</i> *
GALLIFORMES:				CAMAU	3	western sandpiper	<i>Calidris mauri</i> *
Phasianidae — Upland Game Birds				CAMI	3	least sandpiper	<i>Calidris minutilla</i> *
PHCO	5	ring-necked pheasant	<i>Phasianus colchicus</i>	CABA	5	Baird's sandpiper	<i>Calidris bairdii</i> *
DECA	5	spruce grouse	<i>Dendragapus canadensis</i>	CAMEL	5	pectoral sandpiper	<i>Calidris melanotos</i> *
DEOB	5	blue grouse	<i>Dendragapus obscurus</i>	CAAC	3	sharp-tailed sandpiper	<i>Calidris acuminata</i> *
LALE	4	white-tailed ptarmigan	<i>Lagopus leucurus</i>	CAPT	3	rock sandpiper	<i>Calidris ptilocnemis</i> *
BOUM	5	ruffed grouse	<i>Bonasa umbellus</i>	CAALP	3	dunlin	<i>Calidris alpina</i> *
MEGA	5	wild turkey	<i>Meleagris gallopavo</i>				
COVI	5	northern bobwhite	<i>Colinus virginianus</i>				

Order & Family Letter Code	Life Form	Common Name	Scientific Name
CAHI	3	stilt sandpiper	<i>Calidris himantopus</i> *
TRSU	3	buff-breasted sandpiper	<i>Tryngites subruficollis</i> *
LIGR	3	short-billed dowitcher	<i>Limnodromus griseus</i> *
LISC	3	long-billed dowitcher	<i>Limnodromus scolopaceus</i> *
GAGA	3	common snipe	<i>Gallinago gallinago</i>
PHTR	3	Wilson's phalarope	<i>Phalaropus tricolor</i>
PHLO	3	red-necked phalarope	<i>Phalaropus lobatus</i>
PHALFU	3	red phalarope	<i>Phalaropus fulicaria</i> *
Laridae — Gulls and Terns			
LAPI	3	Franklin's gull	<i>Larus pipixcan</i> *
LAPH	3	Bonaparte's gull	<i>Larus philadelphia</i> *
LAHE	3	Heermann's gull	<i>Larus heermanni</i> *
LARCAN	3	mew gull	<i>Larus canus</i> *
LADE	3	ring-billed gull	<i>Larus delawarensis</i> *
LACAL	3	California gull	<i>Larus californicus</i>
LAAR	3	herring gull	<i>Larus argentatus</i> *
LATH	3	Thayer's gull	<i>Larus thayeri</i> *
LAOC	3	western gull	<i>Larus occidentalis</i> *
LAGL	3	glaucous-winged gull	<i>Larus glaucescens</i> *
LAHY	3	glaucous gull	<i>Larus hyperboreus</i> *
RITR	3	black-legged kittiwake	<i>Rissa tridactyla</i> **
XESA	3	Sabine's gull	<i>Xema sabini</i> *
STERCA	3	Caspian tern	<i>Sterna caspia</i> *
STHI	3	common tern	<i>Sterna hirundo</i> *
STPA	3	Arctic tern	<i>Sterna paradisaea</i> *
STFO	3	Forster's tern	<i>Sterna forsteri</i> *
CHNI	3	black tern	<i>Chlidonias niger</i> *
Alcidae — Auks, Murres, and Puffins			
URAA	3	common murre	<i>Uria aalge</i> **
CECO	3	pigeon guillemot	<i>Cephus columba</i> **
BRMA	12	marbled murrelet	<i>Brachyramphus marmoratus</i>
SYAN	16	ancient murrelet	<i>Synthliboramphus antiquus</i> **
PTAL	16	Cassin's auklet	<i>Ptychoramphus aleuticus</i> **
CEMO	16	rhinoceros auklet	<i>Cerorhinca monocerata</i>
FRCI	16	tufted puffin	<i>Fratercula cirrhata</i> **
COLUMBIFORMES: Columbidae — Pigeons and Doves			
COLI	4	rock dove	<i>Columba livia</i>
COFA	11	band-tailed pigeon	<i>Columba fasciata</i>
ZEMA	11	mourning dove	<i>Zenaidura macroura</i>

Order & Family Letter Code	Life Form	Common Name	Scientific Name
STRIGIFORMES: Tytonidae — Barn Owls			
TYAL	14	common barn-owl	<i>Tyto alba</i>
Strigidae — Typical Owls			
OTFL	14	flamulated owl	<i>Otus flammeolus</i> ***
OTKE	14	western screech-owl	<i>Otus kennicottii</i>
BUVI	12	great horned owl	<i>Bubo virginianus</i>
NYSC	5	snowy owl	<i>Nyctea scandiaca</i> **
SUUL	14	northern hawk-owl	<i>Surnia ulula</i> ***
GLGN	14	northern pygmy-owl	<i>Glaucidium gnoma</i>
ATCU	15	burrowing owl	<i>Athene cunicularia</i>
STOC	14	spotted owl	<i>Strix occidentalis</i>
STVA	14	barred owl	<i>Strix varia</i>
STRNE	12	great gray owl	<i>Strix nebulosa</i> ***
ASOT	11	long-eared owl	<i>Asio otus</i> *
ASFL	5	short-eared owl	<i>Asio flammeus</i>
AEAC	14	northern saw-whet owl	<i>Aegolius acadicus</i>
CAPRIMULGIFORMES: Caprimulgidae — Goatsuckers			
CHMI	6	common nighthawk	<i>Chordeiles minor</i>
PHNU	6	common poorwill	<i>Phalaenoptilus nuttallii</i>
APODIFORMES: Apodidae — Swifts			
CYNI	4	black swift	<i>Cypseloides niger</i>
CHVA	14	Vaux's swift	<i>Chaetura vauxi</i>
Trochilidae — Hummingbirds			
ARCAL	8	black-chinned hummingbird	<i>Archilochus alexandri</i> ***
CAAN	7	Anna's hummingbird	<i>Calypte anna</i>
STELCA	7	calliope hummingbird	<i>Stellula calliope</i>
SEPL	11	broad-tailed hummingbird	<i>Selasphorus platycircus</i> ***
SERUF	11	rufous hummingbird	<i>Selasphorus rufus</i>
SESA	7	Allen's hummingbird	<i>Selasphorus sasin</i>
CORACIIFORMES: Alcedinidae — Kingfishers			
CEAL	16	belted kingfisher	<i>Ceryle alcyon</i>
PICIFORMES: Picidae — Woodpeckers			
MELE	13	Lewis' woodpecker	<i>Melanerpes lewis</i>
MEFO	13	acorn woodpecker	<i>Melanerpes formicivorus</i>
SPRU	13	red-breasted sapsucker	<i>Sphyrapicus ruber</i>
SPHTH	13	Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>
PIPU	13	downy woodpecker	<i>Picoides pubescens</i>

Order & Family Letter Code	Life Form	Common Name	Scientific Name
PIVI	13	hairy woodpecker	<i>Picoides villosus</i>
PIAL	13	white-headed woodpecker	<i>Picoides albolarvatus</i>
PITR	13	three-toed woodpecker	<i>Picoides tridactylus</i>
PIAR	13	black-backed woodpecker	<i>Picoides arcticus</i>
COAU	13	northern flicker	<i>Colaptes auratus</i>
DRPI	13	pileated woodpecker	<i>Dryocopus pileatus</i>
PASSERIFORMES:			
Tyrannidae — Tyrant Flycatchers			
COBO	10	olive-sided flycatcher	<i>Contopus borealis</i>
COSO	11	western wood-pewee	<i>Contopus sordidulus</i>
EMTR	7	willow flycatcher	<i>Empidonax traillii</i>
EMHA	11	Hammond's flycatcher	<i>Empidonax hammondi</i>
EMOB	8	dusky flycatcher	<i>Empidonax oberholseri</i>
EMWR	8	gray flycatcher	<i>Empidonax wrightii</i> ***
EMDI	11	western flycatcher	<i>Empidonax difficilis</i>
SANI	4	black phoebe	<i>Sayornis nigricans</i>
SAYSA	4	Say's phoebe	<i>Sayornis saya</i>
MYCI	14	ash-throated flycatcher	<i>Myiarchus cinerascens</i>
TYVE	11	western kingbird	<i>Tyrannus verticalis</i>
TYTY	7	eastern kingbird	<i>Tyrannus tyrannus</i>
Alaudidae — Larks			
ALAR	5	Eurasian skylark	<i>Alauda arvensis</i> **
ERAL	5	horned lark	<i>Eremophila alpestris</i>
Hirundinidae — Swallows			
PRSU	14	purple martin	<i>Progne subis</i>
TABI	14	tree swallow	<i>Tachycineta bicolor</i>
TATH	14	violet-green swallow	<i>Tachycineta thalassina</i>
STSE	16	northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
RIRI	16	bank swallow	<i>Riparia riparia</i>
HIPY	4	cliff swallow	<i>Hirundo pyrrhonota</i>
HIRU	4	barn swallow	<i>Hirundo rustica</i>
Corvidae — Jays, Magpies, and Crows			
PECA	11	gray jay	<i>Perisoreus canadensis</i>
CYST	11	Steller's jay	<i>Cyanocitta stelleri</i>
APCO	7	scrub jay	<i>Aphelocoma coerulescens</i>
NUCO	10	Clark's nutcracker	<i>Nucifraga columbiana</i>
PIPI	7	black-billed magpie	<i>Pica pica</i>
COBR	11	American crow	<i>Corvus brachyrhynchos</i>
CORCO	4	common raven	<i>Corvus corax</i>
Paridae — Titmice			
PAAT	14	black-capped chickadee	<i>Parus atricapillus</i>

Order & Family Letter Code	Life Form	Common Name	Scientific Name
PAGA	14	mountain chickadee	<i>Parus gambeli</i>
PARU	14	chestnut-backed chickadee	<i>Parus rufescens</i>
PAIN	14	plain titmouse	<i>Parus inornatus</i>
Aegithalidae — Bushtits			
PSMI	8	bushtit	<i>Psaltiriparus minimus</i>
Sittidae — Nuthatches			
SITCA	13	red-breasted nuthatch	<i>Sitta canadensis</i>
SICAR	13	white-breasted nuthatch	<i>Sitta carolinensis</i>
SIPY	13	pygmy nuthatch	<i>Sitta pygmaea</i>
Certhiidae — Creepers			
CEAM	14	brown creeper	<i>Certhia americana</i>
Troglodytidae — Wrens			
SAOB	4	rock wren	<i>Salpinctes obsoletus</i> *
CATME	4	canyon wren	<i>Catherpes mexicanus</i> *
THBE	14	Bewick's wren	<i>Thryomanes bewickii</i>
TRAE	14	house wren	<i>Troglodytes aedon</i>
TRTR	14	winter wren	<i>Troglodytes troglodytes</i>
CIPA	8	marsh wren	<i>Cistothorus palustris</i>
Cinclidae — Dippers			
CIME	3	American dipper	<i>Cinclus mexicanus</i>
Muscicapidae — Muscicapids			
RESA	10	golden-crowned kinglet	<i>Regulus satrapa</i>
RECA	10	ruby-crowned kinglet	<i>Regulus calendula</i>
POLCA	11	blue-gray gnatcatcher	<i>Foliophila caerulea</i>
SIME	14	western bluebird	<i>Sialia mexicana</i>
SICU	14	mountain bluebird	<i>Sialia currucoides</i>
MYTO	6	Townsend's solitaire	<i>Myadestes townsendi</i>
CAUS	7	Swainson's thrush	<i>Catharus ustulatus</i>
CAGU	7	hermit thrush	<i>Catharus guttatus</i>
TUMI	11	American robin	<i>Turdus migratorius</i>
IXNA	11	varied thrush	<i>Ixoreus naevius</i>
CHFA	8	wrentit	<i>Chamaea fasciata</i>
Mimidae — Mockingbirds and Thrashers			
MIPO	7	northern mockingbird	<i>Mimus polyglottos</i> ***
Motacillidae — Pipits			
ANSP	5	water pipit	<i>Anthus spinoletta</i>
Bombycillidae — Waxwings			
BOGA	10	Bohemian waxwing	<i>Bombycilla garrulus</i>
BOCE	9	cedar waxwing	<i>Bombycilla cedrorum</i>
Laniidae — Shrikes			
LAEX	7	northern shrike	<i>Lanius excubitor</i>
LALU	7	loggerhead shrike	<i>Lanius ludovicianus</i>

Order & Family Letter Code	Life Form	Common Name	Scientific Name	Order & Family Letter Code	Life Form	Common Name	Scientific Name
Sturnidae — Starlings				AGTR	7	tricolored blackbird	<i>Agelaius tricolor</i>
STVU	14	European starling	<i>Sturnus vulgaris</i>	STUNE	5	western meadowlark	<i>Sturnella neglecta</i>
Vireonidae — Vireos				XAXA	7	yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
VISO	11	solitary vireo	<i>Vireo solitarius</i>	EUCY	7	Brewer's blackbird	<i>Euphagus cyanocephalus</i>
VIHU	11	Hutton's vireo	<i>Vireo huttoni</i>	MOAT	7	brown-headed cowbird	<i>Molothrus ater</i>
VIGI	11	warbling vireo	<i>Vireo gilvus</i>	ICGA	9	northern oriole	<i>Icterus galbula</i>
VIOL	11	red-eyed vireo	<i>Vireo olivaceus</i>	Fringillidae — Grosbeaks and Finches			
Emberizidae — Emberizids				LEUAR	4	rosy finch	<i>Leucosticte arctoa</i>
VECE	6	orange-crowned warbler	<i>Vermivora celata</i>	PIEN	11	pine grosbeak	<i>Pinicola enucleator</i>
VERU	6	Nashville warbler	<i>Vermivora ruficapilla</i>	CARPU	11	purple finch	<i>Carpodacus purpureus</i>
DEPE	8	yellow warbler	<i>Dendroica petechia</i>	CACAS	11	Cassin's finch	<i>Carpodacus cassinii</i>
DENCO	10	yellow-rumped warbler	<i>Dendroica coronata</i>	CARME	9	house finch	<i>Carpodacus mexicanus</i>
DENI	10	black-throated gray warbler	<i>Dendroica nigrescens</i>	LOXCU	10	red crossbill	<i>Loxia curvirostra</i>
DETO	10	Townsend's warbler	<i>Dendroica townsendi</i>	LOLE	10	white-winged crossbill	<i>Loxia leucoptera</i>
DEOC	10	hermit warbler	<i>Dendroica occidentalis</i>	CAFL	11	common redpoll	<i>Carduelis flammea</i>
OPTO	8	MacGillivray's warbler	<i>Oporornis tolmiei</i>	CAPI	11	pine siskin	<i>Carduelis pinus</i>
GETR	3	common yellowthroat	<i>Geothlypis trichas</i>	CAPS	7	lesser goldfinch	<i>Carduelis psaltria</i>
WIPU	6	Wilson's warbler	<i>Wilsonia pusilla</i>	CATR	8	American goldfinch	<i>Carduelis tristis</i>
ICVI	8	yellow-breasted chat	<i>Icteria virens</i>	COVE	11	evening grosbeak	<i>Coccothraustes vespertinus</i>
PILU	10	western tanager	<i>Piranga ludoviciana</i>	Passeridae — Weaver Finches			
PHME	9	black-headed grosbeak	<i>Pheucticus melanocephalus</i>	PADOM	14	house sparrow	<i>Passer domesticus**</i>
PAAMO	7	lazuli bunting	<i>Passerina amoena</i>	MAMMALS ³			
PICH	7	green-tailed towhee	<i>Pipilo chlorurus</i>				
PIER	7	rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	MARSUPIALIA:			
PIFU	7	brown towhee	<i>Pipilo fuscus</i>	Didelphidae — New World Opossums			
SPPA	11	chipping sparrow	<i>Spizella passerina</i>	DIVI	5	Virginia opossum	<i>Didelphis virginiana</i>
POOGR	5	vesper sparrow	<i>Poocetes gramineus</i>	INSECTIVORA:			
CHGR	5	lark sparrow	<i>Chondestes grammacus</i>	Soricidae — Shrews			
PASA	5	Savannah sparrow	<i>Passerculus sandwichensis</i>	SOBE	16	Pacific water shrew	<i>Sorex bendirii</i>
AMSA	5	grasshopper sparrow	<i>Ammodramus savannarum</i>	SOCI	15	masked shrew	<i>Sorex cinereus</i>
PAIL	7	fox sparrow	<i>Passerella iliaca</i>	SOMO	15	dusky shrew	<i>Sorex monticolus</i>
MELME	7	song sparrow	<i>Melospiza melodia</i>	SOPAC	15	Pacific shrew	<i>Sorex pacificus</i>
MELI	6	Lincoln's sparrow	<i>Melospiza lincolni</i>	SOPAL	16	water shrew	<i>Sorex palustris</i>
ZOAL	5	white-throated sparrow	<i>Zonotrichia albicollis**</i>	SOTRO	15	Trowbridge's shrew	<i>Sorex trowbridgii</i>
ZOAT	5	golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	SOVA	15	vagrant shrew	<i>Sorex vagrans</i>
ZOLE	7	white-crowned sparrow	<i>Zonotrichia leucophrys</i>	SOYA	15	Yaquina shrew	<i>Sorex yaquinae***</i>
JUHY	5	dark-eyed junco	<i>Junco hyemalis</i>	Talpidae — Moles			
CALLA	5	lapland longspur	<i>Calcarius lapponicus***</i>	NEGI	15	shrew-mole	<i>Neurotrichus gibbsii</i>
PLNI	5	snow-bunting	<i>Plectrophenax nivalis***</i>	SCLA	15	broad-footed mole	<i>Scapanus latimanus</i>
AGPH	7	red-winged blackbird	<i>Agelaius phoeniceus</i>	SCOR	15	coast mole	<i>Scapanus orarius</i>
				SCTO	15	Townsend's mole	<i>Scapanus townsendii</i>

³ Scientific names and phylogenetic listings after Honacki et al. 1982, common names after Jones et al. 1982.

Order & Family Letter Code	Life Form	Common Name	Scientific Name
CHIROPTERA: Vespertilionidae — Vespertilionid Bats			
ANPA	4	pallid bat	<i>Antrozous pallidus</i>
EPFU	14	big brown bat	<i>Eptesicus fuscus</i>
LANO	14	silver-haired bat	<i>Lasionycteris noctivagans</i>
LACI	11	hoary bat	<i>Lasiurus cinereus</i>
MYOCA	14	California myotis	<i>Myotis californicus</i>
MYEV	14	long-eared myotis	<i>Myotis evotis</i>
MYKE	14	Keen's myotis	<i>Myotis keenii</i>
MYLU	14	little brown myotis	<i>Myotis lucifugus</i>
MYTH	14	fringed myotis	<i>Myotis thysanodes</i>
MYVO	14	long-legged myotis	<i>Myotis volans</i>
MYYU	14	Yuma myotis	<i>Myotis yumanensis</i>
PLTO	4	Townsend's big-eared bat	<i>Plecotus townsendii</i>
Molossidae — Molossid Bats			
TABR	4	Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
CARNIVORA: Canidae — Canids			
CALAT	15	coyote	<i>Canis latrans</i>
CANLU	15	gray wolf	<i>Canis lupus</i> ***
URCI	15	gray fox	<i>Urocyon cinereoargenteus</i>
VUVU	15	red fox	<i>Vulpes vulpes</i>
Ursidae — Bears			
URAM	15	black bear	<i>Ursus americanus</i>
URAR	15	grizzly bear	<i>Ursus arctos</i>
Procyonidae — Procyonids			
BAAS	4	ringtail	<i>Bassariscus astutus</i>
PRLO	14	raccoon	<i>Procyon lotor</i>
Mustelidae — Mustelids			
ENLU	1	sea otter	<i>Enhydra lutris</i> **
GUGU	5	wolverine	<i>Gulo gulo</i>
LUCA	16	river otter	<i>Lutra canadensis</i>
MAAM	14	marten	<i>Martes americana</i>
MAPE	14	fisher	<i>Martes pennanti</i>
MEMEP	15	striped skunk	<i>Mephitis mephitis</i>
MUER	15	ermine	<i>Mustela erminea</i>
MUFR	15	long-tailed weasel	<i>Mustela frenata</i>
MUVI	14	mink	<i>Mustela vison</i>
SPPU	15	spotted skunk	<i>Spilogale putorius</i>
TATA	15	badger	<i>Taxidea taxus</i>
Felidae — Cats			
FECO	4	mountain lion	<i>Felis concolor</i>
LYCA	5	lynx	<i>Lynx canadensis</i>
LYRU	4	bobcat	<i>Lynx rufus</i>
Otariidae — Eared Seals			
EUJU	3	northern sea lion	<i>Eumetopias jubatus</i> **
ZACA	3	California sea lion	<i>Zalophus californianus</i> **
Phocidae — Hair Seals			
PHVI	3	harbor seal	<i>Phoca vitulina</i> *
ARTIODACTYLA: Cervidae — Cervids			
CEEL	5	elk	<i>Cervus elaphus</i>
ODHE	5	mule deer and black-tailed deer	<i>Odocoileus hemionus</i>
ODVILE	5	Columbian white-tailed deer	<i>Odocoileus virginianus leucurus</i>
Bovidae — Bovids			
ORAM	4	mountain goat	<i>Oreamnos americanus</i>
RODENTIA: Apodontidae — Mountain Beaver			
APRU	15	mountain beaver	<i>Aplodontia rufa</i>
Sciuridae — Squirrels			
GLSA	14	northern flying squirrel	<i>Glaucomys sabrinus</i>
MACA	4	hoary marmot	<i>Marmota caligata</i>
MAFL	4	yellow-bellied marmot	<i>Marmota flaviventris</i>
MAOL	4	Olympic marmot	<i>Marmota olympus</i>
SCCA	11	gray squirrel	<i>Sciurus carolinensis</i> **
SCIGR	10	western gray squirrel	<i>Sciurus griseus</i>
SCNI	11	fox squirrel	<i>Sciurus niger</i> **
SPBEE	15	California ground squirrel	<i>Spermophilus beecheyi</i>
SPLA	15	golden-mantled ground squirrel	<i>Spermophilus lateralis</i>
SPSA	15	Cascade golden-mantled ground squirrel	<i>Spermophilus saturatus</i>
TAAM	15	yellow-pine chipmunk	<i>Tamias amoenus</i>
TASI	15	Siskiyou chipmunk	<i>Tamias siskiyou</i>
TATO	15	Townsend's chipmunk	<i>Tamias townsendii</i>
TADO	10	Douglas' squirrel	<i>Tamiasciurus douglasii</i>
Geomyidae — Pocket Gophers			
THBO	15	Botta's pocket gopher	<i>Thomomys bottae</i>
THBU	15	Camas pocket gopher	<i>Thomomys bulbivorus</i>
THMA	15	western pocket gopher	<i>Thomomys mazama</i>
HTHA	15	northern pocket gopher	<i>Thomomys talpoides</i>
Heteromyidae — Heteromyids			
DIHE	15	Heermann's kangaroo rat	<i>Dipodomys heermanni</i>
PEPA	15	Great Basin pocket mouse	<i>Perognathus parvus</i>

Order & Family Letter Code	Life Form	Common Name	Scientific Name	Order & Family Letter Code	Life Form	Common Name	Scientific Name
Castoridae — Beavers				Muridae — Murids			
CASCAN	16	beaver	<i>Castor canadensis</i>	MUMU	15	house mouse	<i>Mus musculus</i>
Cricetidae — Cricetids				RANO	15	Norway rat	<i>Rattus norvegicus</i>
NECI	5	bushy-tailed woodrat	<i>Neotoma cinerea</i>	RARA	5	black rat	<i>Rattus rattus</i>
NEFU	5	dusky-footed woodrat	<i>Neotoma fuscipes</i>	Zapodidae — Jumping Mice			
PEMA	15	deer mouse	<i>Peromyscus maniculatus</i>	ZAPR	3	western jumping mouse	<i>Zapus princeps</i>
PETRU	4	piñon mouse	<i>Peromyscus truei</i>	ZATR	3	Pacific jumping mouse	<i>Zapus trinotatus</i>
REME	15	western harvest mouse	<i>Reithrodontomys megalotis</i>	Erethizontidae — New World Porcupines			
Arvicolidae — Voles				ERDO	6	porcupine	<i>Erethizon dorsatum</i>
ARBAL	15	white-footed vole	<i>Arborimus albipes</i>	Myocastoridae — Myocastorids			
ARLO	10	red tree vole	<i>Arborimus longicaudus</i>	MYCO	16	nutria	<i>Myocastor coypus</i>
CLCA	15	western red-backed vole	<i>Clethrionomys californicus</i>	LAGOMORPHA: Ochotonidae — Pikas			
CLGA	15	southern red-backed vole	<i>Clethrionomys gapperi</i>	OCPR	4	pika	<i>Ochotona princeps</i>
MICAL	15	California vole	<i>Microtus californicus</i>	Leporidae — Hares and Rabbits			
MICAN	15	gray-tailed vole	<i>Microtus canicaudus</i>	LEAM	5	snowshoe hare	<i>Lepus americanus</i>
MILO	15	long-tailed vole	<i>Microtus longicaudus</i>	LECA	5	black-tailed jack rabbit	<i>Lepus californicus</i>
MIMO	15	montane vole	<i>Microtus montanus</i>	ORCU	15	European rabbit	<i>Oryctolagus cuniculus</i>
MIOR	15	creeping vole	<i>Microtus oregoni</i>	SYBA	5	brush rabbit	<i>Sylvilagus bachmani</i>
MIRI	15	water vole	<i>Microtus richardsoni</i>	SYFL	15	eastern cottontail	<i>Sylvilagus floridanus</i>
MITO	15	Townsend's vole	<i>Microtus townsendii</i>	SYNU	15	Nuttall's cottontail	<i>Sylvilagus nuttallii</i>
ONZI	16	muskrat	<i>Ondatra zibethicus</i>				
PHIN	15	heather vole	<i>Phenacomys intermedius</i>				
SYBO	15	nothern bog lemming	<i>Synaptomys borealis</i>				

Appendix 2

178 freshwater and selected marine fish species found west of the crest of the Cascade Range in Oregon and Washington listed in phylogenetic sequence by common and scientific names

Appendix 2 lists in phylogenetic order the common and scientific names of 178 freshwater and selected marine fish species found in waters west of the crest of the Cascade Range in Oregon and Washington. The computer letter code, the life form group to which that species was assigned, and occurrence code for each species also are shown.

All species were assigned to one of four categories as follows:

Unmarked – Species whose habitat requirements are such that forestry practices will impact their reproduction, distribution or forage base at the site of the forest manipulation.

* Species whose habitat requirements are such that impacts of forestry practices on their distribution or forage base will occur at sites removed from the immediate area of forest manipulation.

** Species whose habitat requirements are such that there is only a slight chance of forestry related impacts.

*** Casual, very rare species, or those whose occurrence status is undetermined at this time.

Species in the two and three asterisk categories usually are not included in other appendices although some of them are discussed under specialized habitats.

Order & Family Letter Code	Life Form	Common Name	Occurrence ^{1/}	Scientific Name
FRESH WATER AND SELECTED MARINE FISH ^{2/}				
PETROMYZONTIFORMES: Petromyzontidae — Lampreys				
LAAY	1-E	river lamprey	F-S	<i>Lampetra ayresi</i>
LARI	1-E	western brook lamprey	F	<i>Lampetra richardsoni</i>
LATR	1-E	Pacific lamprey	F-S	<i>Lampetra tridentata</i> *
SQUALIFORMES: Squalidae — Dogfish Sharks				
SQAC	1-A	spiny dogfish	S	<i>Squalus acanthias</i> *
RAJIFORMES: Rajidae — Skates				
RABI	1-E	big skate	S	<i>Raja binoculata</i> **
RARH	1-E	longnose skate	S	<i>Raja rhina</i> **
CHIMAERIFORMES: Chimaeridae — Chimaeras				
HYCO	1-E	spotted ratfish	S	<i>Hydrolagus coliei</i> ***
ACIPENSERIFORMES: Acipenseridae — Sturgeons				
ACME	1-G	green sturgeon	S-F	<i>Acipenser medirostris</i> *
ACTR	1-G	white sturgeon	F-S	<i>Acipenser transmontanus</i>

^{1/} F = Inhabits freshwater.

S = Inhabits saltwater.

F-S = Found in both fresh and saltwater with its primary habitat indicated by the letter which appears first.

A = Anadromous.

^{2/} After Robins et al. 1980.

Order & Family Letter Code	Life Form	Common Name	Occurrence ¹	Scientific Name
CLUPEIFORMES: Clupeidae — Herrings				
ALSA	1-A	American shad	A	<i>Alosa sapidissima</i>
CLHA	1-E	Pacific herring	S-F	<i>Clupea harengus</i> *
DOPE	1-A	threadfin shad	S-F	<i>Dorosoma petenense</i> ***
SASA	1-A	Pacific sardine	S	<i>Sardinops sagax</i> **
Engraulidae — Anchovies				
ENMO	1-A	northern anchovy	S	<i>Engraulis mordax</i> **
SALMONIFORMES: Salmonidae — Trouts				
ONGO	1-E	pink salmon	A	<i>Oncorhynchus gorbuscha</i>
ONKE	1-E	chum salmon	A	<i>Oncorhynchus keta</i>
ONKI	1-E	coho salmon	A	<i>Oncorhynchus kisutch</i>
ONNE	1-E	sockeye salmon (kokanee)	A-F	<i>Oncorhynchus nerka</i>
ONTS	1-E	chinook salmon	A	<i>Oncorhynchus tshawytscha</i>
PRCO	1-E	pygmy whitefish	F	<i>Prosopium coulteri</i>
PRWI	1-E	mountain whitefish	F	<i>Prosopium williamsoni</i>
SAAG	1-E	golden trout	F	<i>Salmo aguabonita</i> ***
SACL	1-E	cutthroat trout	F-A	<i>Salmo clarki</i>
SAGA	1-E	rainbow trout (steelhead)	F-A	<i>Salmo gairdneri</i>
SALSA	1-E	Atlantic salmon	A-F	<i>Salmo salar</i>
SATR	1-E	brown trout	F	<i>Salmo trutta</i> ***
SACO	1-E	bull trout	F	<i>Salvelinus confluentus</i>
SAFO	1-E	brook trout	F	<i>Salvelinus fontinalis</i>
SAMA	1-E	Dolly Varden	F-A	<i>Salvelinus malma</i>
SANA	1-E	lake trout	F	<i>Salvelinus namaycush</i> ***
THAR	1-E	Arctic grayling	F	<i>Thymallus arcticus</i> ***
Osmeridae — Smelts				
ALEL	1-E	whitebait smelt	S	<i>Allosmerus elongatus</i> *
HYPR	1-E	surf smelt	S-F	<i>Hypomesus pretiosus</i> *
SPST	1-E	night smelt	S	<i>Spirinchus starksi</i> **
SPTHA	1-E	longfin smelt	A-F	<i>Spirinchus thaleichthys</i> *
THPAC	1-E	eulachon	A	<i>Thaleichthys pacificus</i> *
Umbridae — Mudminnows				
NOHU	1-A	Olympic mudminnow	F	<i>Novumbra hubbsi</i>
CYPRINIFORMES: Cyprinidae — Carps and Minnows				
ACAL	1-E	chiselmouth	F	<i>Acrocheilus alutaceus</i> ***
CARAU	1-E	goldfish	F	<i>Carassius auratus</i> **

¹/F = Inhabits freshwater.

S = Inhabits saltwater.

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A = Anadromous.

Order & Family Letter Code	Life Form	Common Name	Occurrence ^{1/}	Scientific Name
CYCA	1-E	common carp	F	<i>Cyprinus carpio</i> *
HYCR	1-E	Oregon chub	F	<i>Hybopsis crameri</i> *
MYLCA	1-E	peamouth	F	<i>Mylocheilus caurinus</i>
PTOR	1-E	northern squawfish	F	<i>Ptychocheilus oregonensis</i>
PTUM	1-E	Umpqua squawfish	F	<i>Ptychocheilus umpquae</i>
RHCA	1-E	longnose dace	F	<i>Rhinichthys cataractae</i>
RHEV	1-E	Umpqua dace	F	<i>Rhinichthys evermanni</i>
RHFA	1-E	leopard dace	F	<i>Rhinichthys falcatus</i>
RHOS	1-E	speckled dace	F-S	<i>Rhinichthys osculus</i>
RIBA	1-E	redside shiner	F-S	<i>Richardsonius balteatus</i>
TITI	1-E	tench	F	<i>Tinca tinca</i> *
Catostomidae — Suckers				
CACA	1-G	longnose sucker	F	<i>Catostomus catostomus</i>
CACO	1-G	bridgelip sucker	F	<i>Catostomus columbianus</i>
CATMA	1-G	largescale sucker	F-S	<i>Catostomus macrocheilus</i>
CARI	1-G	Klamath smallscale sucker	F	<i>Catostomus rimiculus</i>
SILURIFORMES: Ictaluridea — Bullhead Catfishes				
ICCA	1-E	white catfish	F	<i>Ictalurus catus</i> ***
ICME	1-E	black bullhead	F	<i>Ictalurus melas</i> ***
ICNA	1-E	yellow bullhead	F	<i>Ictalurus natalis</i>
ICNE	1-E	brown bullhead	F	<i>Ictalurus nebulosus</i>
ICPU	1-E	channel catfish	F	<i>Ictalurus punctatus</i>
PERCOPSIFORMES: Percopsidae — Trout-perches				
PETRA	1-E	sand roller	F	<i>percopsis transmontana</i> *
GOBIESOCIFORMES: Gobiesocidae — Clingfishes				
GOMA	1-G	northern clingfish	S	<i>Gobiesox maeandricus</i> **
GADIFORMES: Gadidae — Codfishes				
GAMA	1-G	Pacific cod	S	<i>Gadus macrocephalus</i> ***
LOLO	1-E	burbot	F	<i>Lota lota</i> **
MIPR	1-A	Pacific tomcod	S	<i>Microgadus proximus</i> *
Zoarcidae — Eelpouts				
LYBR	1-E	shortfin eelpout	S	<i>Lycodes brevipes</i> **
LYPAL	1-E	wattled eelpout	S	<i>Lycodes palearis</i> **
LYPAC	1-E	blackbelly eelpout	S	<i>Lycodopsis pacifica</i> **

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Order & Family Letter Code	Life Form	Common Name	Occurrence ^{1/}	Scientific Name
ATHERINIFORMES:				
Cyprinodontidae — Killifishes				
LUPA	1-E	rainwater killifish	S-F	<i>Lucania parva</i> ***
Poeciliidae — Livebearers				
GAAF	1-A	mosquitofish	F	<i>Gambusia affinis</i> ***
Atherinidae — Silversides				
ATAF	1-E	topsmelt	S-F	<i>Atherinops affinis</i> **
ATCA	1-E	jacksmelt	S	<i>Atherinopsis californiensis</i> **
GASTEROSTEIFORMES:				
Gasterosteidae — Sticklebacks				
AUFL	1-E	tube-snout	S	<i>Aulorhynchus flavidus</i> *
GAAC	1-E	threespine stickleback	S-F	<i>Gasterosteus aculeatus</i>
Syngnathidae — Pipefishes				
SYLE	1-C	bay pipefish	S	<i>Syngnathus leptorhynchus</i> *
PERCIFORMES:				
Percichthyidae — Temperate Basses				
MOSA	1-A	striped bass	A	<i>Morone saxatilis</i> *
Centrarchidae — Sunfishes				
AMRU	1-E	rock bass	F	<i>Ambloplites rupestris</i> *
LECY	1-E	green sunfish	F	<i>Lepomis cyanellus</i> ***
LEGI	1-E	pumpkinseed	F	<i>Lepomis gibbosus</i> *
LEGU	1-E	warmouth	F	<i>Lepomis gulosus</i> ***
LEMA	1-E	bluegill	F	<i>Lepomis macrochirus</i> *
MIDO	1-E	smallmouth bass	F	<i>Micropterus dolomieu</i>
MISA	1-E	largemouth bass	F	<i>Micropterus salmoides</i>
POAN	1-E	white crappie	F	<i>Pomoxis annularis</i>
POMNI	1-E	black crappie	F	<i>Pomoxis nigromaculatus</i>
Percidae — Perches				
PEFL	1-E	yellow perch	F-S	<i>Perca flavescens</i>
STVI	1-E	walleye	F	<i>Stizostedion vitreum</i> **
Embiotocidae — Surfperches				
AMRH	1-C	redtail surfperch	S	<i>Amphistichus rhodotus</i> *
CYAG	1-C	shiner perch	S-F	<i>Cymatogaster aggregata</i>
EMLA	1-C	striped seaperch	S	<i>Embiotoca lateralis</i> *
HYAR	1-C	walleye surfperch	S	<i>Hyperprosopon argenteum</i> *
HYEL	1-A	silver surfperch	S	<i>Hyperprosopon ellipticum</i> **
PHFU	1-C	white seaperch	S	<i>Phanerodon furcatus</i> *
RHVA	1-C	pile perch	S	<i>Rhacochilus vacca</i> *

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Order & Family Letter Code	Life Form	Common Name	Occurrence ^{1/}	Scientific Name
Stichaeidae — Pricklebacks				
ANPU	1-E	high cockscomb	S	<i>Anoplarchus purpureus</i> **
CHNU	1-E	mosshead warbonnet	S	<i>Chirolophis nugator</i> **
LUMA	1-E	daubed shanny	S	<i>Lumpenus maculatus</i> ***
LUSA	1-E	snake pricklyback	S	<i>Lumpenus sagitta</i> **
PHCH	1-E	ribbon pricklyback	S	<i>Phytichthys chirus</i> **
PORO	1-C	whitebarred pricklyback	S	<i>Poroclinus rothrocki</i> **
XIAT	1-C	black pricklyback	S	<i>Xiphister atropurpureus</i> **
XIMU	1-C	rock pricklyback	S	<i>Xiphister mucosus</i> **
Pholidae — Gunnel				
APFL	1-E	penpoint gunnel	S	<i>Apodichthys flavidus</i> **
PHLA	1-E	crescent gunnel	S	<i>Pholis laeta</i> **
PHOR	1-G	saddleback gunnel	S-F	<i>Pholis ornata</i>
PHSC	1-E	red gunnel	S	<i>Pholis schultzi</i> **
XEFU	1-E	rockweed gunnel	S	<i>Xerperes fucorum</i> **
Anarrhichadidae — Wolffishes				
ANOC	1-E	wolf-eel	S	<i>Anarrhichthys ocellatus</i> **
Ammodytidae — Sand Lances				
AMHE	1-E	Pacific sand lance	S	<i>Ammodytes hexapterus</i> **
Gobiidae — Gobies				
CLIO	1-E	arrow goby	S	<i>Clevelandia ios</i> **
LELE	1-E	bay goby	S	<i>Lepidogobius lepidus</i> **
Scorpaenidae — Scorpionfishes				
SECA	1-A	copper rockfish	S	<i>Sebastes caurinus</i> **
SEHE	1-A	rosethorn rockfish	S	<i>Sebastes helvonomaculatus</i> ***
SEMA	1-A	quillback rockfish	S	<i>Sebastes maliger</i> **
SEME	1-C	black rockfish	S	<i>Sebastes melanops</i> **
SEMY	1-A	blue rockfish	S	<i>Sebastes mystinus</i> **
SENE	1-A	China rockfish	S	<i>Sebastes nebulosus</i> **
SENI	1-A	tiger rockfish	S	<i>Sebastes nigrocinctus</i> **
SEPA	1-A	bocaccio	S	<i>Sebastes paucispinis</i> **
SEPI	1-A	canary rockfish	S	<i>Sebastes pinniger</i> **
SERA	1-A	grass rockfish	S	<i>Sebastes rastrelliger</i> **
SERU	1-A	yelloweye rockfish	S	<i>Sebastes ruberrimus</i> **
Hexagrammidae — Greenlings				
HEDE	1-G	kelp greenling	S	<i>Hexagrammos decagrammus</i> **
HELA	1-G	rock greenling	S	<i>Hexagrammos lagocephalus</i> **
HEST	1-G	whitespotted greenling	S	<i>Hexagrammos stelleri</i> **
OPEL	1-G	lingcod	S	<i>Ophiodon elongatus</i> **
OXPI	1-G	painted greenling	S	<i>Oxylebius pictus</i> **

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Order & Family Letter Code	Life Form	Common Name	Occurrence ^{1/}	Scientific Name
Cottidae — Sculpins				
ARFE	1-E	padded sculpin	S	<i>Artedius fenestralis</i> **
ARLA	1-G	smoothhead sculpin	S	<i>Artedius lateralis</i> **
ASRH	1-G	rosylip sculpin	S	<i>Ascelichthys rhodorus</i> **
BLCI	1-G	silverspotted sculpin	S	<i>Blepsias cirrhosus</i> **
CHPU	1-G	roughback sculpin	S	<i>Chitonotus pugetensis</i> **
CLAC	1-G	sharpnose sculpin	S	<i>Clinocottus acuticeps</i> **
CLEM	1-G	calico scuplin	S	<i>Clinocottus embryum</i> **
CLGL	1-G	mosshead sculpin	S	<i>Clinocottus globiceps</i> **
COAL	1-G	coastrange scuplin	F-S	<i>Cottus aleuticus</i>
COAS	1-G	prickly sculpin	F-S	<i>Cottus asper</i>
COBA	1-G	mottled sculpin	F	<i>Cottus bairdi</i>
COBE	1-G	Paiute scuplin	F	<i>Cottus beldingi</i>
COCON	1-G	shorthead sculpin	F	<i>Cottus confusus</i>
COGU	1-G	riffle sculpin	F-S	<i>Cottus gulosus</i>
COPE	1-E	reticulate sculpin	F-S	<i>Cotus perplexus</i>
CORH	1-G	torrent sculpin	F	<i>Cottus rhotheus</i>
ENBI	1-G	buffalo sculpin	S	<i>Enophrys bison</i> *
HEHE	1-G	red Irish lord	S	<i>Hemilepidotus hemilepidotus</i> **
HESP	1-G	brown Irish lord	S	<i>Hemilepidotus spinosus</i> **
LEAR	1-G	Pacific staghorn sculpin	S-F	<i>Leptocottus armatus</i>
MYPO	1-G	great sculpin	S	<i>Myoxocephalus polyacanthocephalus</i> **
NAOC	1-G	sailfin sculpin	S	<i>Nautichthys oculofasciatus</i> **
OLMA	1-G	tidepool sculpin	S	<i>Oligocottus maculosus</i> **
OLSN	1-G	fluffy sculpin	S	<i>Oligocottus snyderi</i> **
PSPA	1-E	tadpole sculpin	S	<i>Psychrolutes paradoxus</i> **
SCMA	1-E	cabezon	S	<i>Scorpaenichthys marmoratus</i> **
SYGI	1-E	manacled sculpin	S	<i>Synchirus gilli</i> **
TRMA	1-G	roughspine sculpin	S	<i>Triglops macellus</i> **
Agonidae — Poachers				
AGVU	1-G	northern spearnose poacher	S	<i>Agonopsis vulsa</i> **
AGAC	1-G	sturgeon poacher	S	<i>Agonus acipenserinus</i> **
ANIN	1-G	smooth alligatorfish	S	<i>Anoplogonus inermis</i> **
OCVE	1-G	warty poacher	S	<i>Occella verrucosa</i>
PABA	1-C	tubenose poacher	S	<i>Pallasina barbata</i> **

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Order & Family Letter Code	Life Form	Common Name	Occurrence ¹	Scientific Name
Cyclopteridae — Snailfishes				
EUOR	1-G	Pacific spiny lumpsucker	S	<i>Eumicrotremus orbis</i> **
LIFL	1-E	tidepool snailfish	S	<i>Liparis florum</i> **
LIFU	1-E	slipskin snailfish	S	<i>Liparis fucensis</i> **
LIPU	1-E	showy snailfish	S	<i>Liparis pulchellus</i> **
LIRU	1-E	ringtail snailfish	S	<i>Liparis rutteri</i> **
PLEURONECTIFORMES:				
Bothidae — Lefteye Flounders				
CISO	1-C	Pacific sanddab	S	<i>Citharichthys sordidus</i> *
CIST	1-C	speckled sanddab	S	<i>Citharichthys stigmaeus</i> *
Pleuronectidae — Righteye Flounders				
ATST	1-E	arrowtooth flounder	S	<i>Atheresthes stomias</i> ***
EOJO	1-C	petrale sole	S	<i>Eopsetta jordanii</i> ***
GLZA	1-C	rex sole	S	<i>Glyptocephalus zachirus</i> **
HIEL	1-C	flathead sole	S	<i>Hippoglossoides elassodon</i> **
ISIS	1-G	butter sole	S	<i>Isopsetta isolepis</i> **
LEBI	1-G	rock sole	S	<i>Lepidopsetta bilineata</i> **
LYEX	1-G	slender sole	S	<i>Lyopsetta exilis</i> **
MIPA	1-G	Dover sole	S	<i>Microstomus pacificus</i> ***
PAVE	1-C	English sole	S	<i>Parophrys vetulus</i> *
PLST	1-C	starry flounder	S-F	<i>Platichthys stellatus</i> *
PLCO	1-C	C-O sole	S	<i>Pleuronichthys coenosus</i> **
PSME	1-C	sand sole	S	<i>Psettichthys melanostictus</i> **

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Appendix 3

Species requiring special consideration because of their classification by either State or Federal agencies

Computer letter code	Life form	Species common name	Federal (1)		State (2)	
			Fish & Wildl. Ser. End. Species Act	C.I.T.E.S. Appendix #	OR	WA
AMPHIBIANS						
RAPR	2	spotted frog				T
REPTILES						
CHPI	3	painted turtle		II		
CLMA	3	western pond turtle		II		T
CHBO	5	rubber boa		II		
BIRDS						
PEER	3	American white pelican				E
PEOC	3	brown pelican	E		E	E
ANALGA	3	Tule white-fronted goose ↘		II		
BRCALE	3	Aleutian Canada goose ↘	E	I	E	E
PAHA	12	osprey		II		
ELCA	11	black-shouldered kite		II		
HALE	12	bald eagle	T	I	T	T
CICY	5	northern harrier		II		
ACST	11	sharp-shinned hawk		II		
ACCO	11	Cooper's hawk		II		
ACGE	11	northern goshawk		II		
BULI	12	red-shouldered hawk		II		
BUSW	7	Swainson's hawk		II		
BUJA	12	red-tailed hawk		II		
BULA	5	rough-legged hawk		II		
AQCH	12	golden eagle		II		
FASP	14	American kestrel		II		
FACO	11	merlin		II		
FAPE	4	peregrine falcon	E	I	E	E
FARU	4	gyrfalcon		I		
FAME	4	prairie falcon		II		
GRCA	3	sandhill crane				E
CHAL	3	snowy plover			T	E
TYAL	14	common barn-owl		II		
OTFL	14	flamulated owl		II		
OTKE	14	western screech-owl		II		
BUVI	12	great horned owl		II		
NYSC	5	snowy owl		II		
SUUL	14	northern hawk-owl		II		
GLGN	14	northern pygmy-owl		II		
ATCU	15	burrowing owl		II		
STOC	14	spotted owl		II	T	T
STVA	14	barred owl		II		
STRNE	12	great gray owl		II		
ASOT	11	long-eared owl		II		
ASFL	5	short-eared owl		II		
AEAC	14	northern saw-whet owl		II		
MAMMALS						
CANLU	15	gray wolf	E	II		E
URAR	15	grizzly bear	T	II		E
ENLU	1	sea otter	T	I	T	E
GUGU	5	wolverine			T	
LUCA	16	river otter		II		
FECO	4	mountain lion		II		
LYCA	5	lynx		II		
LYRU	4	bobcat		II		
ODVILE	5	Columbian white-tailed deer ↘	E		E	E

↘ subspecies

(1) Federal threatened and endangered species listings come under two classifications. The first includes those species listed by the U.S. Department of the Interior, Fish and Wildlife Service under the Endangered Species Act of 1973. The second includes those species listed in Appendices I and II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

(2) The Oregon State listing includes the federally classified threatened or endangered species along with those species that the Oregon Department of Fish and Wildlife has determined to be threatened within the state. The Washington State listing includes the federally classified threatened or endangered species along with those species that the Washington Department of Game has determined are endangered or threatened within the state.

Legend

E Endangered - Species in danger of extinction throughout all or a significant portion of their range.

T Threatened - Species likely to become endangered in the foreseeable future.

I Appendix I - Species listed in this appendix are considered to be in such a precarious position that any trade would be a threat to the survival of the species.

II Appendix II - Species listed in this appendix are not considered to be in immediate danger but continued unregulated trade could pose a threat to the species survival.

Appendix 4

Common and scientific names of plants mentioned in text and appendices^{1/}

Common name	Scientific name
GRASSES	
bluegrass	<i>Poa</i> spp.
bluegrass, Kentucky	<i>Poa pratensis</i>
brome, ripgut	<i>Bromus rigidus</i>
chess, soft	<i>Bromus mollis</i>
danthonia	<i>Danthonia</i> spp.
fescue	<i>Festuca</i> spp.
fescue, alta or tall	<i>Festuca arundinacea</i>
fescue, green	<i>Festuca viridula</i>
needlegrass	<i>Stipa</i> spp.
orchard-grass	<i>Dactylis glomerata</i>
redtop	<i>Agrostis alba</i>
rye, annual (Italian)	<i>Lolium multiflorum</i>
rye, perennial	<i>Lolium perenne</i>
velvet-grass	<i>Holcus</i> spp.
wildrye, blue	<i>Elymus glaucus</i>
wildrye, medusahead	<i>Elymus caput-medusae</i>
HERBS, SHRUBS, and TREES	
Alaska-cedar	<i>Chamaecyparis nootkatensis</i>
alder	<i>Alnus</i> spp.
alder, red	<i>Alnus rubra</i>
ash, Oregon	<i>Fraxinus latifolia</i>
azalia, Cascades	<i>Rhododendron albiflorum</i>
bearberry	<i>Arctostaphylos uva-ursi</i>
beargrass	<i>Xerophyllum tenax</i>
bedstraw	<i>Galium</i> spp.
blackberry	<i>Rubus</i> spp.
blackberry, dwarf (Pacific)	<i>Rubus ursinus</i>
boxwood, Oregon	<i>Pachistima myrsinites</i>
broom, Scot's	<i>Cytisus scoparius</i>
bulrush	<i>Scirpus</i> spp.
bunchberry	<i>Cornus canadensis</i>
California-laurel	<i>Umbellularia californica</i>
carrot, wild	<i>Daucus carota</i>
catsear	<i>Hypochaeris</i> spp.
cat-tail	<i>Typha latifolia</i>

Common name	Scientific name
ceanothus	<i>Ceanothus</i> spp.
cedar	A collective term for any of the following species: <i>Alaska-cedar</i> , <i>incense-cedar</i> , <i>Port Orford-cedar</i> , <i>western redcedar</i>
cherry, bitter	<i>Prunus emarginata</i>
chinkapin, giant (golden)	<i>Castanopsis chrysophylla</i>
clover	<i>Trifolium</i> spp.
clintonia	<i>Clintonia uniflora</i>
clover, subterranean	<i>Trifolium subterraneum</i>
clover, white	<i>Trifolium repens</i>
coltsfoot	<i>Petasites frigidus</i>
copper-bush	<i>Cladanthamnus pyroliflorus</i>
cotton-grass	<i>Eriophorum</i> spp.
cottonwood, black	<i>Populus trichocarpa</i>
currant, stink	<i>Ribes bracteosum</i>
deer-fern	<i>Blechnum spicant</i>
devil's club	<i>Oplopanax horridum</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
dwarf mistletoe	<i>Arceuthobium</i> spp.
eel-grass	<i>Zostera marina</i>
fir, California red	<i>Abies magnifica</i>
fir, grand	<i>Abies grandis</i>
fir, noble	<i>Abies procera</i>
fir, Pacific silver	<i>Abies amabilis</i>
fir, Shasta red	<i>Abies magnifica</i> var. <i>shastensis</i>
fir, subalpine	<i>Abies lasiocarpa</i>
fir, true	A collective term for any of the <i>Abies</i> species
fir, white	<i>Abies concolor</i>
fireweed	<i>Epilobium angustifolium</i>
fleabane	<i>Erigeron</i> spp.
gorse	<i>Ulex europaeus</i>
hawksbeard	<i>Crepis</i> spp.
hawkweed	<i>Hieracium</i> spp.

Common name	Scientific name
hawthorn, black	<i>Crataegus douglasii</i>
hazelnut	<i>Corylus cornuta</i>
heath (Mertens' mountain heather)	<i>Cassiope mertensiana</i>
heather, red mountain-	<i>Phyllodoce empetriiformis</i>
hemlock, mountain	<i>Tsuga mertensiana</i>
hemlock, western	<i>Tsuga heterophylla</i>
huckleberry, Alaska (blueberry)	<i>Vaccinium alaskaense</i>
huckleberry, big	<i>Vaccinium membranaceum</i>
huckleberry, evergreen	<i>Vaccinium ovatum</i>
huckleberry, red	<i>Vaccinium parvifolium</i>
incense-cedar	<i>Calocedrus decurrens</i> (syn. <i>Libocedrus decurrens</i>)
inside-out-flower	<i>Vancouveria hexandra</i>
lady-fern	<i>Athyrium filix-femina</i>
larch, western	<i>Larix occidentalis</i>
lupine	<i>Lupinus</i> spp.
madrone, Pacific	<i>Arbutus menziesii</i>
manzanita	<i>Arctostaphylos</i> spp.
maple	<i>Acer</i> spp.
maple, bigleaf	<i>Acer macrophyllum</i>
maple, vine	<i>Acer circinatum</i>
mountain-ash, Sitka	<i>Sorbus sitchensis</i>
oak	<i>Quercus</i> spp.
oak, California black	<i>Quercus kelloggii</i>
oak, canyon live	<i>Quercus chrysolepis</i>
oak, Oregon white	<i>Quercus garryana</i>
oak-fern	<i>Gymnocarpium dryopteris</i>
ocean-spray	<i>Holodiscus discolor</i>
Oregongrape	<i>Berberis</i> spp.
oxalis	<i>Oxalis</i> spp.
phacelia	<i>Phacelia</i> spp.
pickleweed	<i>Salicornia virginica</i>
pine, Jeffrey	<i>Pinus jeffreyi</i>
pine, lodgepole	<i>Pinus contorta</i> var. <i>latifolia</i>
pine, ponderosa	<i>Pinus ponderosa</i>
pine, shore	<i>Pinus contorta</i> var. <i>contorta</i>
pine, sugar	<i>Pinus lambertiana</i>
pine, western white	<i>Pinus monticola</i>
pine, whitebark	<i>Pinus albicaulis</i>
poison-oak	<i>Rhus diversiloba</i>

Common name	Scientific name
Port Orford-cedar	<i>Chamaecyparis lawsoniana</i>
prince's-pine	<i>Chimaphila</i> spp.
pyrola	<i>Pyrola</i> spp.
rabbit-brush	<i>Chrysothamnus nauseosus</i>
redwood	<i>Sequoia sempervirens</i>
rhododendron, Pacific	<i>Rhododendron macrophyllum</i>
rose	<i>Rosa</i> spp.
rush	<i>Juncus</i> spp.
rusty-leaf	<i>Menziesia ferruginea</i>
salal	<i>Gaultheria shallon</i>
salmonberry	<i>Rubus spectabilis</i>
sedge	<i>Carex</i> spp.
silk-tassel	<i>Garrya</i> spp.
skunk cabbage	<i>Lysichitum americanum</i>
snowberry	<i>Symphoricarpos albus</i>
Solomon's seal, false	<i>Smilacina</i> spp.
sphagnum	<i>Sphagnum</i> spp.
spruce, Englemann	<i>Picea engelmannii</i>
spruce, Sitka	<i>Picea sitchensis</i>
sword-fern	<i>Polystichum munitum</i>
tanoak	<i>Lithocarpus densiflorus</i>
thimbleberry	<i>Rubus parviflorus</i>
trefoil, birdsfoot	<i>Lotus corniculatus</i>
trillium	<i>Trillium</i> spp.
tule (bulrush)	<i>Scirpus</i> spp.
twinlineflower	<i>Linnaea borealis</i>
twisted-stalk	<i>Streptopus</i> spp.
valerian	<i>Valeriana</i> spp.
vanillaleaf	<i>Achlys triphylla</i>
vetch	<i>Vicia</i> spp.
violet	<i>Viola</i> spp.
water-lily, yellow	<i>Nuphar polysepalum</i>
water-parsley	<i>Oenanthe sarmentosa</i>
western redcedar	<i>Thuja plicata</i>
whortleberry	<i>Vaccinium scoparium</i>
willow	<i>Salix</i> spp.
willow, Scouler	<i>Salix scouleriana</i>
woodrush	<i>Luzula</i> spp.
yarrow	<i>Achillea millefolium</i>
yew, Pacific	<i>Taxus brevifolia</i>

1/ Plant names follow Hitchcock and Cronquist (1976) and Little (1979)

Appendix 5

Plant community descriptions

WETLAND TYPES

Herbaceous wetland: bogs, marshes, and meadows dominated by herbaceous plants and having a site potential for minimal shrub cover (less than 60 percent).

- *Sphagnum* bogs with low shrubs, prostrate herbs, mosses.
- Cat-tail, bulrush, standing water marshes.
- Meadows dominated by sedges, rushes, grasses; subirrigated.

Herbaceous wetland when associated with lakes, streams or other bodies of water is called "riparian" wetland. When it occurs without adjacent water, it is called "wetland." Riparian wetland is a kind of herbaceous wetland.

Hardwood and shrubby wetland: wetlands dominated by woody vegetation with crown cover exceeding 60 percent; includes both shrubby and forest types.

- Shrubby marshes and swamps of willow, alder, Oregon ash, stink currant.
- Hardwood forest wetland or swamp of black cottonwood, alder, Oregon ash, maple, often with a shrubby component of willow, black hawthorn, stink currant.

Stand conditions apply to this type. Hardwood wetland associated with water is called "riparian" wetland. Without adjacent water it is called just "wetland." Abundant free water is required for this type—alder can occur as a wetland or as a dryland type—but the wildlife habitat that results is quite different.

Coniferous wetland: coniferous forest with standing water part of the season; always with a high water table making it different from a dryland coniferous forest even though both can be dominated by the same tree species.

- Western redcedar, western hemlock, and sometimes Port Orford-cedar swamps with distinctive ground vegetation that demands free and unbound water such as skunk cabbage, stink currant, sedges, lady-fern, water-parsley.

Stand conditions apply to this type. Coniferous wetland might not be "riparian" vegetation; often these stands occur in swales with no adjacent water, in which case they are "wetlands." Often the temperate conifer forest will occur adjacent to rivers and lakes—in a riparian setting—but without the standing water and wetland ground vegetation. These areas should not be classified as coniferous wetland.

DRYLAND TYPES

Grass-forb dry hillsides: grasslands with less than 40 percent woody cover. Grasses may be natural or introduced; natural grasslands are usually the result of shallow soils on harsh, southerly slopes. Introduced grasslands are commonly found in southwest Oregon and result from tree and shrub control followed by seeding of grasses and legumes. These areas are maintained in permanent pasture.

- Trees may be oak, Pacific madrone, or Douglas-fir but make up less than 40 percent cover.
- Shrubs may provide up to 40 percent cover; rose, ceanothus, poison-oak, snowberry, hazelnut, manzanita.
- Perennial grasses like danthonia, fescue, redtop, velvetgrass, bluegrass, needlegrass; annual grasses such as ripgut brome, soft chess, medusahead wildrye, annual fescues; forbs such as wild carrot, yarrow, vetch.
- Seeded species such as perennial rye, Kentucky bluegrass, alta fescue, orchardgrass, subterranean clover, white clover.

Grass-forb hillsides commonly grade into mountain shrubland and chaparral or deciduous hardwood; sometimes into evergreen hardwood and conifer-hardwood types. The grass-forb type is considered a reasonably permanent landscape feature; it is not the same as crop-rotation pasture or grass seed fields.

Mountain shrubland and chaparral: includes Küchler's No. 34—woody vegetation under 15 feet tall and over 40 percent crown canopy because of inher-

ent site factors that prevent woody vegetation from exceeding 15 feet in height. The 40 percent woody crown canopy separates grassland from shrubland; the 15-foot height separates shrubland from forest land. It includes the "chaparral" of southwest Oregon and interior valley shrublands.

- Tree species may be Oregon white oak, California black oak, or even Pacific madrone if they do not exceed 15 feet in height at maturity.
- Shrub species may be chaparral such as ceanothus, manzanita, canyon live oak, poison-oak, Oregon white oak, rabbit-brush, silk-tassel; or they may be interior valley or coastal area shrub like rose, Scot's broom, poison-oak, bitter cherry, snowberry, hazelnut, ocean-spray, blackberry, gorse.

Mountain shrubland may be former farmland that is currently in a longterm shrub stage, a near-climax chaparral type, or a local poor site situation which has limited potential for woody vegetation. Mountain shrubland can grade into deciduous or evergreen hardwood, conifer-hardwood, mixed conifer, and grassland types.

Deciduous hardwood: closely related to Küchler's No. 26—separated from mountain shrubland by tree heights greater than 15 feet at maturity and from grassland by crown cover exceeding 40 percent, and from conifer-hardwood by having less than 30 percent cover of conifers, and from evergreen hardwood by having less than 50 percent evergreen hardwood.

- Tree species may be Oregon white oak or California black oak with some Douglas-fir, ponderosa pine, Jeffrey pine, incense-cedar, Pacific madrone, tanoak.
- Shrub species may be poison-oak, snowberry, hazelnut, ceanothus, manzanita, blackberry, bitter cherry, ocean-spray.
- Herbaceous species may be grasses, forbs, or both, at times rather sparse.

Deciduous hardwood characteristically occurs in the interior valleys (Rogue, Umpqua, Willamette, Puget), as well as in the rain shadow of the Olympics including the San Juan Islands. It can grade into mountain shrubland, conifer-hardwood, mixed conifer, and evergreen hardwood.

Evergreen hardwood: hardwood trees that do not shed their leaves each fall; tree heights at maturity must be greater than 15 feet and crown cover greater than 40 percent; more than 50 percent of the stand must be evergreen hardwoods; and conifers cannot exceed 30 percent of the stand.

- *Tree species commonly present are Pacific madrone, golden chinkapin, tanoak, and in some cases, canyon live oak; occasionally California-laurel may dominate. Other tree species may be Oregon white oak, California black oak, Douglas-fir, incense-cedar, ponderosa pine, sugar pine.*
- *Shrubs may be manzanita, ceanothus, poison-oak, ocean-spray, hazelnut, rose, canyon live oak.*
- *Grasses and forbs may be important.*

Evergreen hardwood commonly occurs in southwest Oregon and again in the Olympic rain shadow and San Juan Islands. It grades into chaparral, mixed conifer forest, and deciduous hardwood forest.

Red alder forest: generally considered a successional plant community to western hemlock or western redcedar; however, red alder can dominate sites in nearly pure stand conditions for long periods of time and thus create distinctive wildlife habitat that can be maintained by silvicultural treatment. Red alder must exceed 70 percent composition of the stand.

- *Stand dominated by red alder; may have some bigleaf maple or some of the climax coniferous trees such as western hemlock, western redcedar, or Sitka spruce.*
- *Ground vegetation is commonly dominated by salmonberry, sword-fern, and herbs.*

Red alder forest commonly occurs in the Coast Ranges on dryland sites. The same tree species—red alder—can also dominate wetland/riparian communities, but the ground vegetation, soil, and topographic setting are quite different. “Red alder forest” means the dryland site.

Conifer-hardwood forest: mixture of coniferous trees and hardwood trees where 30 to 70 percent of the crown cover is hardwoods. They may be deciduous, evergreen, or any combination. When hardwoods exceed 70 percent of the crown cover, the type is “hardwood”; when they are less than 30 percent, the type is “conifer.”

- *Tree species commonly found are Douglas-fir, incense cedar, ponderosa pine, sugar pine, Pacific madrone, tanoak, red alder, bigleaf maple, and at times Oregon white oak, western hemlock, Port Orford-cedar, white fir.*
- *Shrubs vary—salmonberry, manzanita, poison-oak, salal, ceanothus, hazelnut, ocean-spray, or Oregongrape.*
- *Herbs are generally common.*

Conifer-hardwood forest is a reasonably stable successional kind of plant community in which hardwoods maintain a significant status. Often these types remain as conifer-hardwood mixtures after regeneration cutting because of stump sprouting of hardwoods. They grade into mixed conifer types, hardwood types, and red alder.

Mixed coniferous forest (southwest Oregon): conifers must exceed 70 percent of the crown cover of the stand and must be made up of two or more species on dry site conditions. The type is limited to the ecological conditions of southwest Oregon.

- *Tree species most commonly found are Douglas-fir, ponderosa pine, incense-cedar, sugar pine, and white fir. Less common species are Port Orford-cedar, redwood, western hemlock.*
- *Shrubs include giant chinkapin, canyon live oak, tanoak, hazelnut, vine maple, Pacific yew, Oregon-grape, poison-oak, blackberry, salal, manzanita.*
- *Herbaceous plants usually are scarce both in occurrence and density.*

Mixed coniferous forests are limited to the generally dry sites of southwest Oregon that are caused by poorly developed or very stony soils. They occur in the western hemlock zone but do not have the typical “temperate forest” species composition.

Temperate coniferous forest: Küchler's No. 1 and No. 2; the western hemlock zone; low to midelevation coniferous forests generally associated with big game winter range. Conifers must exceed 70 percent of the crown cover for the stand; if not it is conifer-hardwood. More than one conifer is common and species are typical of the areas west of the Cascade Range. The type occurs elsewhere than southwest Oregon.

- *Trees commonly dominant are Douglas-fir, western hemlock, white and grand firs, western redcedar, and Sitka spruce; at upper limits of the elevation zone some Pacific silver fir or Shasta red fir may be found.*
- *Common shrubs are vine maple, salal, evergreen huckleberry, Pacific rhododendron, Oregon boxweed, red bilberry, salmonberry, thimbleberry, giant chinkapin, Oregongrape, Pacific yew, hazelnut.*
- *Common herbs are sword-fern, vanillaleaf, trillium, twinflower, bedstraw, oxalis, deer-fern, inside-out-flower, violet, lady-fern.*

Temperate coniferous forests are the common lower elevation type west of the Cascade Range—a catchall for the general lower forest zone.

High temperate coniferous forest: Küchler's No. 3 and No. 4; the silver fir zone; midelevation to moderately high elevation coniferous forests generally associated with big game summer range but still closed canopy, commercial forest land. Conifers must exceed 70 percent of the crown cover for the stand, otherwise the community would be conifer-hardwood; when more than one conifer is common, the type is dominated by upper elevation species; this community may occur in southwest Oregon.

- *Trees commonly dominant are Douglas-fir, Pacific silver fir, noble fir, Shasta red fir, mountain hemlock; some pioneer species may be present—sugar pine, white*

pine, lodgepole pine; at times subalpine fir or Englemann spruce may be present.

- *Common shrubs are big huckleberry, Alaska huckleberry, wortleberry, vine maple, salal, Oregon grape, Pacific rhododendron, copper-bush, rusty-leaf.*
- *Common herbs are beargrass, woodrush, twinflower, prince's-pine, bunchberry, vanillaleaf, clintonia, false Solomon's-seal, trillium, oak-fern, twisted-stalk.*

High temperate coniferous forests are the common midelevation to upper elevation types west of the Cascade Range—a catchall for the general upper forest zone.

Subalpine forest parks: open subalpine parks and forest stands too high in elevation for a site potential of commercial-type closed canopy forest. Conifers must exceed 70 percent of the tree composition. The combined natural openings and forest parks must have a tree crown cover exceeding 10 percent; if less than 10 percent, do not place in this type.

- *Common trees are mountain hemlock, whitebark pine, subalpine fir, and at times, lodgepole pine.*
- *Common shrubs are wortleberry, red mountain-heather, rusty-leaf, Cascade azalia, western cassiope, Sitka mountain-ash.*
- *Herbs include woodrush, Pacific blackberry, violet, pyrola, beargrass, valerian, sedges.*
- *Openings between forest patches may be dominated by western cassiope, red mountain-heather, sedges, rushes, green fescue, or stony/rocky outcrops.*

Subalpine forest parks are the upper forest type for the area west of the Cascade Range. In general, they are not commercial forestland and commonly occur in wilderness or national parks.

Lodgepole pine (Cascades): successional plant community generally caused by crown fire; usually replaced by high temperate coniferous forest. This type, however, has some unique wildlife habitat characteristics and can easily be maintained by silvicultural treatment. Lodgepole pine must exceed 70 percent of the tree composition.

- *Clearly dominated by lodgepole pine with no more than 30 percent of other species which may be Pacific silver fir, Shasta red fir, mountain hemlock, Douglas-fir.*
- *Shrubby ground vegetation is common; herbs such as beargrass may dominate.*

Lodgepole pine is generally limited to the high temperate coniferous forest zone in the Cascade Range.

Shore pine (coast): an apparently climax type plant community dominated by lodgepole pine (coastal variety). Lodgepole pine must exceed 70 percent composition of the stand.

- *Clearly dominated by the coastal variety of lodgepole pine. Other trees may be Sitka spruce or occasionally Douglas-fir, western hemlock.*
- *Ground vegetation may be nearly absent or may be represented by salal, bearberry, evergreen huckleberry, Pacific rhododendron, and herbs.*

Shore pine is a greatly restricted type occurring only along the coast within salt-spray influence.

Appendix 6

Stand condition descriptions

The descriptions and time intervals for the following stand conditions assume clearcut regeneration treatment with broadcast burning of slash and are based on experience in temperate and high temperate coniferous forest conditions. Under different circumstances or in different plant communities, modification of these descriptions may be necessary.

Grass-forb stand condition: 2 to 5 years in this stand condition (occasionally as long as 10 years).

After cutting, the unit may be largely devoid of vegetation for the first growing season. About the second or third season, annuals from windblown seed dominate—grasses, forbs, or both. Shrub and tree sprouts appear but are not dominant; some shrubs and perennial plants become established through germination of seeds.

Trees are usually planted the spring after burning or cutting, but these do not significantly influence vegetative composition for 3 to 5 years.

- Grass-forb stand condition is defined as: *Shrubs less than 40 percent crown cover and less than 5 feet tall; unit may range from mainly devoid of vegetation to dominance by herbaceous species (grasses and forbs); tree regeneration generally less than 5 feet tall and 40 percent crown cover.*

Shrub stand condition: 3 to 10 years in this stand condition (may remain for 20 to 30 years if tree regeneration is delayed).

This stand condition generally follows the grass-forb condition as the shrubs become dominant enough to significantly change the habitat for wildlife. In some southwest Oregon areas, grasses such as blue wildrye may be so competitive that it will be more than 5 years before shrub dominance occurs.

Planted trees should be from 2 to 10 feet tall. If regeneration fails, this shrub condition may last for many years.

- Shrub stand condition is defined as: *Shrubs greater than 40 percent crown canopy; they can be any height; trees less than 40 percent crown canopy and less than 1 inch in d.b.h. When trees exceed 1 inch in d.b.h. for the stand average, they should be classified in the "open sapling" or "closed sapling" category.*

Open sapling-pole stand condition: 8 to 20 years in this stand condition. (Length of time depends on tree crown closure.)

This stand condition generally follows the shrub condition as a result of tree height growth when tree density is low and crowns have not closed. For example, 200 trees per acre with crowns 6½ feet in diameter will have about 60-percent crown canopy when they reach 1 inch d.b.h. This condition can be **bypassed** if tree densities exceed 400 trees per acre because crowns may close before the stand reaches 1 inch in d.b.h. An open forest stand with good understory of shrubs is very different wildlife habitat from the same diameter stand with a closed crown canopy.

Length of time in this condition is inversely related to stand density—number of trees per acre. This condition can be the direct result of a shelterwood overstory removal.

- Open sapling-pole is defined as: *Average stand diameter greater than 1 inch in d.b.h. and tree crown canopy less than 60 percent. Saplings are 1 to 4 inches in d.b.h.; poles 4 to 9 inches.*

Closed sapling-pole-sawtimber stand condition: 40 to 100 years in this stand condition. (Length of time is a function of timber management: rotation age and thinning.)

This stand condition is a closed crown canopy forest of average stand diameters less than 21 inches in d.b.h. Sparse ground vegetation and similarity of habitat conditions seem more important than average stand diameter or height. Sapling, pole, and small sawtimber stands with closed crowns are lumped together.

Length of time in this condition is determined by rotation age and thinning treatment. If stands are thinned and long rotations used, this stand condition can change to "large sawtimber" or eventually "old growth."

- Closed sapling-pole-sawtimber is defined as: *Average stand diameters between 1 and 21 inches in d.b.h. and crown cover exceeding 60 percent.*

Large sawtimber stand condition: 10 to 100 years in this stand condition. (Length of time may be a function of timber management.)

This condition is composed of trees averaging 21 inches in d.b.h. or larger which is different wildlife habitat than smaller stands. An assumption is made that crown cover in these stands is less than 100 percent resulting in reasonable density of ground vegetation and diversity of species. It is a stand condition between small-diameter forests and old-growth forests in which the decay and down material of old growth is lacking and the larger d.b.h. and more open crown cover are different from those of closed sapling-pole stands.

Length of time in this condition is determined by rotation age and thinning treatments. If mortality and decay are regularly prevented by thinning, this condition will last many years.

- Large sawtimber is defined as: *Stand with average diameters exceeding 21 inches in d.b.h.; crown cover may be less than 100 percent, decay and decadence required for old-growth characteristics are generally lacking, successional trees required by old growth may be lacking, and dead and down material required by old growth is lacking.*

Old-growth stand condition: up to 700 years in this stand condition. (Length of time is a function of vegetation type.)

Old-growth stands are characterized by general decadence of the tree component, decay, dead and down woody material, replacement of the long-lived pioneer species by climax species, often a stand with two or more stories, generally overstory trees with less than 100-percent crown closure, large diameter of

overstory trees, and commonly ages of overstory trees are greater than 200 years. Wildlife habitat is closely related to the condition of these large diameter trees.

"Old-growth" is a connotation given to large-diameter stands (which may be the same diameter as "large sawtimber") that include the above decadent stand characteristics. **Old growth is not necessarily climax.**

Length of time in this condition is determined by longevity of dominant species and by definitions of species composition for old growth.

- Old growth is defined as: *Stands over 200 years old with at least two tree layers (overstory and understory), decay in living trees, snags, and down woody material. Some of the overstory layer may be composed of long-lived successional species (that is, Douglas-fir, western redcedar).*

Appendix 7

Life form descriptions^{1/}

Life form	Reproduces	Feeds	No. of Species ^{2/}	Examples
1 ^{3/}	in water	in water	3	Cope's giant salamander, bullfrog, sea otter
1-A	in water column (eggs, larvae, and juvenile forms are planktonic and the adult form is mobile)	in water column	26	American shad, Olympic mudminnow, copepod
1-B	in water column (adult form is sedentary)	in water column	17	native oyster, butter clam, geoduck clam
1-C	in water column (adult form is mobile)	in or on substrate	50	striped bass, starry flounder, tube worm, Dungeness crab
1-D	in water column (adult form is sedentary)	in or on substrate	7	peanut worm, macoma clam
1-E	in or on substrate (eggs, larvae, or juvenile forms deposited on substrate and the adult form is mobile)	in water column	91	chinook salmon, common carp, smallmouth bass
1-F	in or on substrate (adult form is sedentary)	in water column	0	(sea anemone) ^{4/}
1-G	in or on substrate (adult form is mobile)	in or on substrate	64	white sturgeon, prickly sculpin, periwinkle snail, amphipod
1-H	in or on substrate (adult form is sedentary)	in or on substrate	3	segmented worm, lug worm
2	in water	on the ground, in bushes, and/or in trees	12	northwestern salamander, Pacific treefrog, spotted frog
3	on the ground around water	on the ground, and in bushes, trees, and water	107	western pond turtle, mallard, glaucous-winged gull, Pacific jumping mouse
4	in cliffs, caves, rimrock, and/or talus	on the ground or in the air	31	Del Norte salamander, peregrine falcon, bobcat
5	on the ground without specific water, cliff, rimrock or talus association	on the ground	68	ensatina, ruffed grouse, dark-eyed junco, elk
6	on the ground	in bushes, trees, or the air	8	common nighthawk, Wilson's warbler, porcupine

<i>Life form</i>	<i>Reproduces</i>	<i>Feeds</i>	<i>No. of Species ^{2/}</i>	<i>Examples</i>
7	in bushes	on the ground, in water, or the air	31	green-backed heron, calliope hummingbird, red-winged blackbird
8	in bushes	in trees, bushes, or the air	10	dusky flycatcher, marsh wren, yellow warbler
9	primarily in deciduous trees	in trees, bushes, or the air	4	cedar waxwing, house finch
10	primarily in conifers	in trees, bushes, or the air	15	golden-crowned kinglet, Townsend's warbler, red tree vole
11	in conifers or deciduous trees	in trees, in bushes, on the ground, or in the air	34	Cooper's hawk, Stellar's jay, solitary vireo, hoary bat
12	on very thick branches	on the ground or in water	8	great blue heron, bald eagle, great horned owl
13	in own hole excavated in tree	in trees, in bushes, on the ground, or in the air	14	red-breasted sapsucker, downy woodpecker, red-breasted nuthatch
14	in a hole made by another species or in a natural hole	on the ground, in water, or the air	46	hooded merganser, western screech-owl, black-capped chickadee, long-eared myotis
15	in a burrow underground	on the ground or under it	54	burrowing owl, vagrant shrew, coyote, western pocket gopher
16	in a burrow underground	in the air or in the water	15	bank swallow, water shrew, beaver

^{1/} Adapted from Thomas (1979)

^{2/} Species assignment to life form is based on predominant habitat-use patterns.

^{3/} Only two amphibians and one mammal have been assigned to this life form. The form has been divided into eight sub-groups, however, to accommodate fish and selected aquatic invertebrate species.

^{4/} No species in this life form are included but a representative example would be the sea anemone.

Appendix 8

Occurrence and orientation of 414 wildlife species to western Oregon and Washington plant communities, stand conditions, and special or unique habitats

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
AMPHIBIANS																	
northwestern salamander	AMGR	2	19	B													Breeds early in lowlands and later at higher elev. Requires quiet water for breeding. Larvae often neotenic. Uncommon to common, W. WA. and W. OR.
				F													
				Rs													
long-toed salamander	AMMA	2	19	B													Breeding occurs early in lowlands and later at higher elev. Requires quiet water for breeding and down logs or rock near water for cover. Uncommon to common in suitable habitat. W. WA. and W. OR., except central Oregon coast and Coast Ranges.
				F													
				Rs													
Cope's giant salamander	DICO	1	★	B													Breeding habits unknown, but should be similar to Olympic salamander. Not known to metamorphose in nature, remains aquatic. Olympic Mts., Willapa Hills, and SW Cascades of WA. and the Columbia R. Gorge, OR.
				F													
				Rs													
Pacific giant salamander	DIEN	2	17	B													Requires cold, clear, well oxygenated water for breeding. Common in suitable habitat. W. WA. and W. OR.
				F													
				Rs													
Olympic salamander	RHOL	2	13	B													Restricted to cold, rocky, permanent springs, seepages, and small streams. Common in suitable habitat. W. WA. and W. OR.
				F													
				Rs													
clouded salamander	ANFE	5	22	B													Hibernation may occur Dec. - Jan. Requires abundant ground litter and a moist microhabitat for breeding and feeding. Common resident of W. OR.
				F													
				Rs													
black salamander	ANFL	5	18	B													Hibernation may occur Dec. - Jan. Requires moist habitat with rock or ground debris, preferably near streams or seepages. Rare in the Applegate River Valley, OR., which is the northern limit of its range.
				F													
				Rs													
California slender salamander	BAAT	5	26	B													Found in moist soil under litter, logs, and rocks. SW OR. only, common in preferred habitat.
				F													
				Rs													
Oregon slender salamander	BAWR	5	20	B													Dependent on woody debris of various types for feeding and reproduction. Decaying fir logs seem to be preferred. Uses talus in Columbia River Gorge. Uncommon, but may be locally abundant. Oregon Cascades south to Oakridge.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

★ Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
AMPHIBIANS																																	
northwestern salamander	r.c.: 30-270/clutch, avg. 80. t.s.: not territorial.				B					2	2	1	2	1	1	1	1	1	1														
					F					2	1	1	2	1	1	1	1	1		2	2		2						1			2	
					Rs					2	1	1	2	1	1	1	1	1		2	2		2						1			2	
long-toed salamander	r.c.: 85-350/clutch. h.r.: 100 ft./adult. t.s.: not territorial. m.h.: one 0.25 acre pond/population.				B					2	2	1	2	1	1	1	1	1	1	2													
					F					2	2	1	2	1	1	1	1	1	2	1								1					
					Rs					2	2	1	2	1	1	1	1	1	2	1								1					
Cope's giant salamander					B						1		1	2	2																		
					F						1		1	2	2																		
					Rs						1		1	2	2																		
Pacific giant salamander	r.c.: 70-146/clutch.				B					2	1		1	2	2	2	2		1														
					F					2	1		1	2	2	2	2		1	2			2					1		2	2		
					Rs					2	1		1	2	2	2	2		1	2			2					1		2	2		
Olympic salamander	r.c.: 7-16/clutch, avg. 9. t.s.: not territorial.				B					2	1		1						1											1			
					F					2	1		1						1										1				
					Rs					2	1		1						1										1				
clouded salamander	r.c.: 8-17/clutch, avg. 14. t.s.: not territorial.				B																2	2	1					2	1	2			
					F																2	2	1					2	1	2			
					Rs																2	2	1					2	1	2			
black salamander	r.c.: 7-25/clutch, avg. 15. h.r.: about 1 acre. t.s.: not territorial.				B						1		1						1									2		1			
					F						1		1						1									2		1			
					Rs						1		1						1									2		1			
California slender salamander	r.c.: 4-25/clutch, avg. 10. t.s.: not territorial.				B					2	2																	1		2			
					F					2	2																	1		2			
					Rs					2	2																	1		2			
Oregon slender salamander	r.c.: 11/clutch.				B																	2						2	1	2			
					F																	2						2	1	2			
					Rs																	2						2	1	2			

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					Dry hillides		Mtn. shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					1	Grass-forb		1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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northwestern salamander	AMGR	2	19	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	Herbaceous wetland	Hardwood and shrubby wetland	Coniferous wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
northwestern salamander	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
AMPHIBIANS																	
Ensatina	ENES	5	35	B													Common, widespread, W. WA. and W. OR.
				F													
				Rs													
Dunn's salamander	PLDU	3	14	B													Uses moss covered rock rubble with seepages, or found near permanent cold streams. Uncommon, extreme SW WA., Oregon coast and Coast Ranges, and Oregon Cascades south to Lane Co.
				F													
				Rs													
Del Norte salamander	PLEL	4	16	B													Requires moist but not wet rock rubble areas. This species is uncommon and poorly known. SW OR.
				F													
				Rs													
Larch Mountain salamander	PLLA	4	10	B													Breeding unknown, but should occur during indicated time. Found at base of rocky outcrops, or under logs and leaf litter. Rare, limited to lower Columbia River Gorge.
				F													
				Rs													
Siskiyou Mountains salamander	PLEST	4	16	B													Very sensitive to environmental moisture conditions. Found in loose rock rubble and talus on north facing slopes. Rare, found in Jackson Co., Oregon along upper Applegate River.
				F													
				Rs													
Van Dyke's salamander	PLVA	3	18	B													Breeding unknown but should occur during indicated time. Common in suitable habitat, but distribution limited to Olympic Mts., Willapa Hills and Cascade Range in Pierce, Lewis and Skamania Co's., WA.
				F													
				Rs													
western redback salamander	PLVE	5	24	B													Requires moist microhabitat within rocks, logs, moss and other down material. W. WA. and W. OR. south to Coos Co.
				F													
				Rs													
roughskin newt	TAGR	2	19	B													Widespread and abundant, W. WA. and W. OR.
				F													
				Rs													
western toad	BUBO	2	19	B													Breeds earlier in lowlands than higher elev. Requires quiet, slow moving water for breeding. Frequents meadow areas around water. Common, W. WA. and W. OR. except the Willamette Valley, OR.
				F													
				Rs													
Pacific tree frog	HYRE	2	21	B													May hibernate Nov.- Dec. Needs slow, open water for breeding. Common and widespread, W. WA. and W. OR.
				F													
				Rs													
tailed frog	ASTR	2	14	B													Requires clear, cold, rocky streams for breeding. Many isolated populations, rare to uncommon, W. WA. and W. OR., except Willamette Valley, Or.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

See footnotes at end of appendix.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																								
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands			Edges					Habitat features						
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus
AMPHIBIANS																														
Ensatina	r.c.: 5-16/clutch, avg. 11. h.r.: males move 64 ft. avg., females move 33 ft. avg.	B	2		2	1											2	1									1	2		
		F	2		2	1											2	1									1	2		
		Rs	2		2	1											2	1									1	2		
Dunn's salamander	r.c.: 5-18/clutch, avg. 13	B				1	1										1											1		
		F				1	1										1	2									1	1		
		Rs				1	1										1	2									1	1		
Del Norte salamander	r.c.: 10-16/clutch. t.s.: not territorial.	B																									2	1		
		F																									2	1		
		Rs																									2	1		
Larch Mountain salamander	r.c.: 5-8/clutch.	B																									2	1		
		F																								2	1			
		Rs																								2	1			
Siskiyou Mountains salamander	r.c.: 2-18/clutch, avg. 9. t.s.: not territorial.	B				2	2										2										2	1		
		F				2	2										2									2	1			
		Rs				2	2										2									2	1			
Van Dyke's salamander	r.c.: 11-14/clutch. t.s.: not territorial.	B				1	1	1								1	1										1	1		
		F				1	1	1								1	1									1	1			
		Rs				1	1	1								1	1									1	1			
western redback salamander	r.c.: 10/clutch.	B				1	1									1											1	1		
		F				1	1									1										1	1			
		Rs				1	1									1										1	1			
roughskin newt	r.c.: 30 + /clutch. h.r.: about 1 acre. t.s.: not territorial.	B	2			1	2	1	2	1	1	1	1	1	1															
		F	2			1	2	1	2	1	1	1	1	1	1	2	1	2		2	1		2							
		Rs	2			1	2	1	2	1	1	1	1	1	1	2	1	2		2	1		2							
western toad	r.c.: 300-16,000/clutch, avg. 10,000. t.s.: vicinity of calling male. h.r.: 175 ft ±.	B				2	2		1	1	1	1	1							1	2	2								
		F				2	2		1	1	1	1	1		1	2	2	2	1	2	2				1	2				
		Rs				2	2		1	1	1	1	1		1	2	2	2	1	2	2				1	2				
Pacific tree frog	r.c.: 20-25/clutch. t.s.: vicinity of calling male. m.h.: 2 acre pond/population.	B	2		2	2	2	1	2	1	1	1	1	1																
		F	2		2	2	2	1	2	1	1	1	1	1	2	1				2	2	2			1	2	2			
		Rs	2		2	2	2	1	2	1	1	1	1	1	2	1				2	2	2			1	2	2			
tailed frog	r.c.: 30-50/clutch, avg. 40. h.r.: 0.4 acre. t.s.: not territorial.	B				1	1																							
		F				1	1																		1	2				
		Rs				1	1																		1	2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																									
					Dry hillsides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest						Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth											

AMPHIBIANS

Ensatina	ENES	5	35	B		2	2	2	2	2	1	1	1	2	2	2	1				2	2	2	2	2	2	1	1	1			1	1	1	1
				F		2	2	2	2	2	1	1	1	2	2	2	1				2	2	2	2	2	2	1	1	1			1	1	1	1
				Rs		2	2	2	2	2	1	1	1	2	2	2	1				2	2	2	2	2	2	1	1	1			1	1	1	1
Dunn's salamander	PLDU	3	14	B																															
				F													2		2			2	2	2	2	1	1	1	2	2	2	1	1	1	
				Rs													2		2			2	2	2	2	1	1	1	2	2	2	1	1	1	
Del Norte salamander	PLEL	4	16	B						2	2	2				2				2	2	2				2	2	2				1	1	1	
				F						2	2	2				2				2	2	2				2	2	2				1	1	1	
				Rs						2	2	2				2				2	2	2				2	2	2				1	1	1	
Larch Mountain salamander	PLLA	4	10	B																															
				F																															
				Rs																															
Siskiyou Mountains salamander	PLEST	4	16	B																					2	2	2				2	1	1	1	
				F																						2	2	2				2	1	1	1
				Rs																						2	2	2				2	1	1	1
Van Dyke's salamander	PLVA	3	18	B																					2	2	2								
				F																						2	2	2							
				Rs																						2	2	2							
western redback salamander	PLVE	5	24	B					2	2	2	2			2	2									2	2	2	2							
				F					2	2	2	2			2	2										2	2	2	2						
				Rs					2	2	2	2			2	2										2	2	2	2						
roughskin newt	TAGR	2	19	B																															
				F		2	2	2	1	1	1	1	1	2	2	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
				Rs		2	2	2	1	1	1	1	1	2	2	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
western toad	BUBO	2	19	B																															
				F				1	1	1	2	2	2	1	1	1	2	2	2	2				1	1	1	2	2	2	1	1	1	2	2	2
				Rs				1	1	1	2	2	2	1	1	1	2	2	2	2				1	1	1	2	2	2	1	1	1	2	2	2
Pacific tree frog	HYRE	2	21	B																															
				F	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2				1	1	1	1	1	1	1	1	1	1	1	
				Rs	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2				1	1	1	1	1	1	1	1	1	1	1	
tailed frog	ASTR	2	14	B																															
				F														2	2	2	2				2	2	2	2	2	2	1	1	1	1	
				Rs															2	2	2	2				2	2	2	2	2	2	1	1	1	1

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																																				
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland										
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland				
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth							
AMPHIBIANS																																						
Ensatina	B			1	2	2	2			1	2	2	2				2	2	2												2	2	2					
	F			1	2	2	2			1	2	2	2				2	2	2							2				2	2	2						
	Rs			1	2	2	2			1	2	2	2				2	2	2							2				2	2	2						
Dunn's salamander	B																																					
	F	2	2	2	1	1	1																		2	2	2	1	1	1	2	2	2	1	1	1		
	Rs	2	2	2	1	1	1																		2	2	2	1	1	1	2	2	2	1	1	1		
Del Norte salamander	B																																					
	F																																					
	Rs																																					
Larch Mountain salamander	B			2	1	1	1																															
	F			2	1	1	1																															
	Rs			2	1	1	1																															
Siskiyou Mountains salamander	B																																					
	F				2	1	1				2	1	1																									
	Rs				2	1	1				2	1	1																									
Van Dyke's salamander	B				2	1	1				2	1	1				2	2	2										2	2	2		2	2	2			
	F				2	1	1				2	1	1				2	2	2									2	2	2		2	2	2				
	Rs				2	1	1				2	1	1				2	2	2									2	2	2		2	2	2				
western redback salamander	B		2	1	1	1	1																		2	1	1			2	2	2	2		2	2	2	
	F		2	1	1	1	1																		2	1	1			2	2	2	2		2	2	2	
	Rs		2	1	1	1	1																		2	1	1			2	2	2	2		2	2	2	
roughskin newt	B																																					
	F	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	1	1	1	1	1	1		
	Rs	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	1	1	1	1	1	1		
western toad	B																														1	1	1	2	2	2		
	F	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2		2	2	2	1	1	1	2	1	1	1	2	2	2	2		2	2	2
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2		2	2	2	1	1	1	2	1	1	1	2	2	2	2		2	2	2
Pacific tree frog	B																																					
	F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	Rs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
tailed frog	B																																					
	F	2	2	1	1	1	1	2	2	1	1	1	1				2	2	2	2							2	2	1	1	1	1		2	2	2	2	
	Rs	2	2	1	1	1	1	2	2	1	1	1	1				2	2	2	2							2	2	1	1	1	1		2	2	2	2	

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Seasonal occurrence and activity												Comments ^{6/}
					January	February	March	April	May	June	July	August	September	October	November	December	

AMPHIBIANS

red-legged frog	RAAU	2	18	B													May hibernate Dec.- Jan. Requires quiet water with surrounding vegetation. Found in damp wooded areas after breeding periods. Common resident throughout W. WA. and W. OR.
				F													
				Rs													
foothill yellow-legged frog	RABO	2	14	B													May hibernate Dec.- Jan. Never found more than a few feet from water. Prefers streams with rocky bottoms and sloping banks with rocks or vegetation for cover. Common in suitable habitat, SW OR.
				F													
				Rs													
Cascade frog	RANCA	2	12	B													Occurs from 3,000 - 9,000 ft. in elev. in the Olympic Mts. and Cascades of WA. and OR.
				F													
				Rs													
bullfrog	RACAT	1	*	B													Common in WA. and OR. below 4,000 ft. in elev. Introduced species. Probably having negative impact on native frog species.
				F													
				Rs													
spotted frog	RAPR	2	11	B													Requires cold permanent marshes, ponds or sloughs. Limited to low and medium altitude bodies of water in W. WA. and W. OR. where bullfrogs are not found. Populations are declining probably from predation by bullfrogs.
				F													
				Rs													

REPTILES

painted turtle	CHPI	3	11	B													Requires quiet, sluggish water with muddy bottom and aquatic vegetation for feeding. Builds nest on high ground in a sunny location. Common, found in the Columbia River Gorge and Willamette Valley north of Salem, OR.
				F													
				Rs													
western pond turtle	CLMA	3	12	B													Requires quiet water with muddy or rocky bottom and aquatic vegetation. Eggs are laid some distance from water in a sunny location. Common, W. OR. and W. WA. except Olympic Peninsula and coast.
				F													
				Rs													
northern alligator lizard	ELCO	5	38	B													Requires cool damp areas with some vegetation and downed material or rocks. Common, W. WA. and W. OR.
				F													
				Rs													
southern alligator lizard	ELMU	5	26	B													Frequents rather open areas with down materials. Common, Columbia River Gorge in W. WA. and valleys and foothills of W. OR.
				F													
				Rs													
sagebrush lizard	SCEGR	5	18	B													Requires open ground with good illumination. Needs rock outcrops and loose soil for breeding. Common in suitable habitat. SW OR.
				F													
				Rs													
western fence lizard	SCOC	5	24	B													Requires rock outcrops, down logs, fence posts, etc. for elevated perches. Common, W. WA. except Olympic Peninsula and coast, and W. OR. except north coast.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

*Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass · shrub	Shrub · forest	Grass · forest	Water · grass	Water · shrub	Water · forest	Snags	Logs & down material	Cliffs	Talus	Caves		
AMPHIBIANS																																	
red-legged frog	r.c.: 500-1,100/clutch, avg. 750.	B	2			2	2	1	2	1	1	1	1	1											1	1	1						
		F	2			2	2	1	2	1	1	1	1	1	1	1									1	1	1						
		Rs	2			2	2	1	2	1	1	1	1	1	1	1									1	1	1						
foothill yellow-legged frog	r.c.: 100-1,000/clutch, avg. 400.	B					1																		1	1	2						
		F					1																		1	1	2						
		Rs					1																		1	1	2						
Cascade frog	r.c.: 100-600/clutch, avg. 300.	B					1			1	1			1	2										1	1	1						
		F					1			1	1			1	2										1	1	1						
		Rs					1			1	1			1	2										1	1	1						
bullfrog	r.c.: 10,000-20,000/clutch. t.s.: vicinity of calling male. m.h.: 4 acre pond/population.	B				1	2	1		1	1	1	1	1											1	1	1						
		F				1	2	1		1	1	1	1	1		1									1	1	1						
		Rs				1	2	1		1	1	1	1	1		1									1	1	1						
spotted frog	r.c.: 1,100-2,400/clutch. h.r.: 2,500-357,000 ft². (Yellowstone N.P.). m.h.: 2 acre pond/population.	B						2		2	1		1	1																			
		F							2		2	1		1	1		1																
		Rs							2		2	1		1	1		1																
REPTILES																																	
painted turtle	r.c.: 5-8/clutch.	B																															
		F				1	1	1		1	1	1	1	1											1	1							
		Rs				1	1	1		1	1	1	1	1											1	1		1					
western pond turtle	r.c.: 5-11/clutch. t.s.: not territorial.	B																															
		F				1	1	1		1	1	1	1	1											1	1							
		Rs				1	1	1		1	1	1	1	1											1	1		1					
northern alligator lizard	r.c.: 2-15/litter, avg. 7. h.r.: about 1 acre. t.s.: not territorial.	B																						1	2	2			1		2		
		F																						1	2	2			1		2		
		Rs																							1	2	2			1		2	
southern alligator lizard	r.c.: 6-20/clutch, avg. 12. h.r.: about 2 acres.	B																						1	2	2							
		F																						1	2	2			1		2		
		Rs																							1	2	2			1		2	
sagebrush lizard	r.c.: 2-7/clutch, 2 clutch/yr. h.r.: 0.5 acre. t.s.: 25 ft. radius of adult male. m.h.: 10 acre/population.	B																						2									
		F																						2						1		1	
		Rs																							2					1		1	
western fence lizard	r.c.: 5-11/clutch, 1-3 clutch/yr. t.s.: vicinity of male. m.h.: 5 acres/population.	B																						2		2							
		F																						2		2				1	1	1	
		Rs																							2		2			1	1	1	

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																									
					Dry hillsides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest						Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth											
AMPHIBIANS																																														
red-legged frog	RAAU	2	18	B																																										
				F		2	2	2			2	2	2	2		1	1	2	2				2			1	2	2	2			2	2	2												
				Rs		2	2	2			2	2	2	2		1	1	2	2				2			1	2	2	2			2	2	2												
foothill yellow-legged frog	RABO	2	14	B																																										
				F		2	2	2	2	2													2	2	2				2	2	2															
				Rs		2	2	2	2	2													2	2	2				2	2	2															
Cascade frog	RANCA	2	12	B																																										
				F																																										
				Rs																																										
bullfrog	RACAT	1	*	B																																										
				F		**			**				**						**						**				**			**														
				Rs		**			**			**						**				**			**			**			**			**												
spotted frog	RAPR	2	11	B																																										
				F																																										
				Rs																																										
REPTILES																																														
painted turtle	CHPI	3	11	B				1	1	1				1	1	1										1	1	1																		
				F																																										
				Rs				1	1	1				1	1	1												1	1	1																
western pond turtle	CLMA	3	12	B	2	2	2	1	1	1				1	1	1										1	1	1			1	1	1													
				F																																										
				Rs	2	2	2	1	1	1				1	1	1												1	1	1			1	1	1											
northern alligator lizard	ELCO	5	38	B		2	2	1	1	2	2	2	2	1	1	2	2	2	2							1	1	1	2	2	2	1	1	1	2	2	2									
				F		2	2	1	1	2	2	2	2	1	1	2	2	2	2							1	1	1	2	2	2	1	1	1	2	2	2									
				Rs		2	2	1	1	2	2	2	2	1	1	2	2	2	2								1	1	1	2	2	2	1	1	1	2	2	2								
southern alligator lizard	ELMU	5	26	B		2	2	2	1	1	1	2	2						2							2	1	1	1	2	2	2	1	1	1	2	2									
				F		2	2	2	1	1	1	2	2						2							2	1	1	1	2	2	2	1	1	1	2	2									
				Rs		2	2	2	1	1	1	2	2						2								2	1	1	1	2	2	2	1	1	1	2	2								
sagebrush lizard	SCEGR	5	18	B	1	1	2						2	2	2																2	2	2													
				F	1	1	2							2	2	2																	2	2	2											
				Rs	1	1	2							2	2	2																	2	2	2											
western fence lizard	SCOC	5	24	B	1	1	1	1	1	1	2			2	2	2										1	1	1				1	1	1												
				F	1	1	1	1	1	1	2			2	2	2											1	1	1					1	1	1										
				Rs	1	1	1	1	1	1	2			2	2	2												1	1	1					1	1	1									

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																															
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland					
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	Herbaceous wetland	Hardwood and shrubby wetland	Coniferous wetland			
	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth			
AMPHIBIANS																																	
red-legged frog	B																																
	F	2	2	2	2	2	2	2	2	2	2	2														2	2	2	1	1			
	Rs	2	2	2	2	2	2	2	2	2	2	2														2	2	2	1	1			
foothill yellow-legged frog	B																																
	F	2	2	2																						1	1	1	1	2	2		
	Rs	2	2	2																						1	1	1	1	2	2		
Cascade frog	B																																
	F							1	1	1	1	1	1	1	1	1	1	1	1		2					1	1	1	1	1	1		
	Rs							1	1	1	1	1	1	1	1	1	1	1	1		2					1	1	1	1	1	1		
bullfrog	B																																
	F			*	*				*	*																*	*	*	*	*	*		
	Rs			*	*				*	*																*	*	*	*	*	*		
spotted frog	B																																
	F	1	1	1	1	2	2	1	1	1	1	2	2													1	2	2	2	2			
	Rs	1	1	1	1	2	2	1	1	1	1	2	2													1	2	2	2	2			
REPTILES																																	
painted turtle	B	1	1	1	2																					1	1	1	1	1			
	F																																
	Rs	1	1	1	2																					1	1	1	1	1			
western pond turtle	B	1	1	1				2	2	2																1	1	1					
	F																																
	Rs	1	1	1				2	2	2																1	1	1	1				
northern alligator lizard	B	1	1	1	2	2	2	1	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2			
	F	1	1	1	2	2	2	1	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2			
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2			
southern alligator lizard	B		2	2	2																						2	2					
	F		2	2	2																						2	2					
	Rs		2	2	2																						2	2					
sagebrush lizard	B							2	2	2				1	1	1																	
	F							2	2	2				1	1	1																	
	Rs																																
western fence lizard	B	1	1	1	2			2	2	2																							
	F	1	1	1	2			2	2	2																							
	Rs	1	1	1	2			2	2	2																							

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
REPTILES																	
western skink	EUSK	3	23	B													Prefers areas with abundant herbaceous cover. Uses rocks, down logs, brush for cover and feeding. Common, W. OR. except coast and Coast Ranges north of Coos Bay.
				F													
				Rs													
rubber boa	CHBO	5	32	B													May hibernate Dec. - Feb. Requires moist areas near or within forests. Uncommon, W. WA. and W. OR.
				F													
				Rs													
racer	COLCO	5	24	B													Found in a variety of habitats, except dense forest. Rare in SW WA., uncommon in W. OR.
				F													
				Rs													
sharptail snake	CONTE	5	31	B													Requires moist habitat with ground debris. Distribution spotty — relict populations in valleys of W. WA. and W. OR.
				F													
				Rs													
ringneck snake	DIPU	5	32	B													Requires moist areas. Uncommon, along the Columbia River Gorge in W. WA. and W. OR.
				F													
				Rs													
common kingsnake	LAGE	5	22	B													Requires loose, well aerated soil for breeding. Uncommon to common, SW OR., mainly the Rogue and upper Umpqua Valleys.
				F													
				Rs													
California mountain kingsnake	LAZO	5	22	B													Requires rotting wood or loose soil for breeding. Found near well-illuminated rocky streams. Uncommon, SW OR., mainly the Rogue Valley.
				F													
				Rs													
gopher snake	PIME	5	31	B													Requires damp, loose soil for burrows. Absent from W. WA. except for a possible population at south end of Puget Sound. Found at lower elev. in W. OR.
				F													
				Rs													
western aquatic garter snake	THCO	3	28	B													Requires water for feeding. Common, SW OR. only.
				F													
				Rs													
western terrestrial garter snake	THEL	5	36	B													Requires damp habitat for feeding. Common. Occurs at lower elevations in W. WA., except the coast, and south of Salem in W. OR., except absent from the Cascades and the coast.
				F													
				Rs													
northwestern garter snake	THOR	5	28	B													May hibernate Nov. - Feb. Common to very common, W. WA. and W. OR.
				F													
				Rs													

See footnotes at end of appendix

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands			Edges						Habitat features								
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
REPTILES																																	
western skink	r.c.: 2-10/clutch. h.r.: about 1 acre.			B																									1		1		
				F					2										2										1	2	1		
				Rs					2											2									1	2	1		
rubber boa	r.c.: 2-8/litter, avg. 4 t.s.: not territorial.			B					2	2									2	1		1							1				
				F					2	2									2	1		1							1		2		
				Rs					2	2									2	1		1							1		2		
racer	r.c.: 5-28/clutch, avg. 19, 1 clutch/yr. m.h.: 50 acres/population.			B					1	1									2	2		1	2	2									
				F					1	1									2	2		1	2	2									
				Rs					1	1									2	2		1	2	2									
sharptail snake	r.c.: 2-9/clutch. t.s.: not territorial.			B															2	2		2							1				
				F															2	2		2							1		1		
				RS															2	2		2							1		1		
ringneck snake	r.c.: 1-10/clutch, avg. 3 1 clutch/yr. t.s.: not territorial. m.h.: 20 acres/population.			B															1	1		1							1				
				F															2	1		1							1		2		
				Rs															2			1							1		2		
common kingsnake	r.c.: 6-12/clutch, avg. 8.			B															1			1											
				F															1			1							2		2		
				Rs															1			1							2		2		
California mountain kingsnake	r.c.: 4-8/clutch, avg. 6.			B					2	2																			1				
				F					1	1																			2				
				Rs					1	1																			2				
gopher snake	r.c.: 3-20/clutch, avg. 7, 1-2 clutch/yr. m.h.: 50 acres/population.			B																													
				F															2	2									2				
				Rs																2									2				
western aquatic garter snake	r.c.: 10-30/litter, avg. 15.			B					1	1	2		2	2	2	2	2	2	1					1	1	2			2				
				F					1	1	2		2	2	2	2	2	2	1					1	1	2			2				
				Rs					2	2	2		2	2	2	2	2	2	1					1	1	2			2				
western terrestrial garter snake	r.c.: 10-30/litter, avg. 20. m.h.: 25 acres/population.			B					2	2	2		2	2	2	2	2	2	1			2	2	2	2			1					
				F					1	1	1		1	1	1	1	1	1	1	1			2	1	1	2			2				
				Rs					2	2	2		2	2	2	2	2	2	2	1			2	2	2	2			2				
northwestern garter snake	r.c.: 3-15/litter, avg. 9.			B	2														1	1	2	1						2					
				F	2															1	1	2	1					2					
				Rs	2															1	1	2	1					2					

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					Dry hillside						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
					1 Grass-forb			1 Grass-forb			2 Shrub			1 Grass-forb			2 Shrub			3 Open sap-pole			4 Closed sap-pole			5 Large sawtimber			6 Old growth			1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3

B-Breeding, F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{4/}	Plant communities and stand conditions ^{3/}																																		
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland								
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland		
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth					
REPTILES																																				
western skink	B	1	1	2				2	2	2																	1	1	2							
	F	1	1	2				2	2	2																	1	1	2							
	Rs	1	1	2				2	2	2																		1	1	2						
rubber boa	B	1	1	1	2	2	2	1	1	1	2	2	2			2	2										2	2	2	2	2	2				
	F	1	1	1	2	2	2	1	1	1	2	2	2			2	2										2	2	2	2	2	2				
	Rs	1	1	1	2	2	2	1	1	1	2	2	2			2	2											2	2	2	2	2	2			
racer	B	1	1					2	2																			2	2	2						
	F	1	1					2	2																			2	2	2						
	Rs	1	1					2	2																			2	2	2						
sharptail snake	B	2	2	2	2	2	2																				2	1	1	1	2					
	F	2	2	2	2	2	2																				2	1	1	1	2	2	2			
	Rs	2	2	2	2	2	2																				2	1	1	1	2	2	2			
ringneck snake	B	2	1	2	2	2	2	2	2	2	2	2	2														2	1	1	1						
	F	1	1	1	2	2	2	1	1	1	2	2	2														2	2	2	2						
	Rs	1	1	1	2	2	2	1	1	1	2	2	2														2	2	2	2						
common kingsnake	B																										1									
	F																										1									
	Rs																										1									
California mountain kingsnake	B																												2	2	2					
	F																											2	2	2						
	Rs																												2	2	2					
gopher snake	B	2	2																									1	1	1						
	F	2	2																									2	2	2						
	Rs	2	2																									2	2	2						
western aquatic garter snake	B																											1	1	1	1	2	2	2	1	1
	F																											1	1	1	1	2	2	2	1	1
	Rs																												1	1	1	1	2	2	2	1
western terrestrial garter snake	B	2	2	2																							2	2	2	2			2	2	2	
	F	2	2	2																							2	2				1	1	1		
	Rs	2	2	2																							2	2	2	2			2	2	2	
northwestern garter snake	B	1	1											2													2	2	2							
	F	1	1											2													2	2	2							
	Rs	1	1											2													2	2	2							

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
REPTILES																	
common garter snake	THSI	3	36	B													Very common and widespread. W. WA. and W. OR.
				F													
				Rs													
western rattlesnake	CRVI	5	26	B													Not abundant in any forest habitat. Found in a few isolated areas in the Willamette Valley on south facing rocky hillsides. Need deep rock crevices for hibernation in the valley. In SW OR. they occur mostly in chaparral and dry rocky areas.
				F													
				Rs													
BIRDS																	
common loon	GAIM	3	★	B													Possibly breeds in coastal lakes of Oregon; permanent, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
pied-billed grebe	POPO	3	★	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
horned grebe	POAU	3	★	B													Permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
red-necked grebe	PODGR	3	★	B													Winter and migrant populations; Puget Sound and coastal WA. and OR.
				F													
				Rs													
eared grebe	PODNI	3	★	B													Winter and migrant populations; W. WA. and W. OR; possible permanent populations.
				F													
				Rs													
western grebe	AEOC	3	★	B													Winter, permanent, and migrant populations; W. WA. and W. OR.; primarily Puget Sound and coastal bays.
				F													
				Rs													
double-crested cormorant	PHAU	3	★	B													Permanent, winter, and migrant populations along WA. and OR. coast; occasionally Puget Sound and inland freshwater lakes.
				F													
				Rs													
American bittern	BOLE	3	10	B													Permanent, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
great blue heron	ARHE	12	14	B													Permanent resident, W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding, □ F-Feeding, □ Rs-Resting, ■ See comments and Chapter 3 narrative

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species

See footnotes at end of appendix.

Species √	Specific data √				Habitat use √	Special and unique habitats √																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Scups	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
REPTILES																																
common garter snake	r.c.: 8-73/litter, avg. 16 h.r.: 23-35 acre. m.h.: 25 acres/population.	B		2		1	1	1	1		1	1	1	2	2		1						1	1			1					
		F		2		2	1	1	1		1	1	1	1	1		1					1	1			1						
		Rs		2		2	2	2	2		2	2	2	2	2		2					2	2			2						
western rattlesnake	r.c.: 4-21/litter, avg. 11, 1 clutch/yr. h.r.: up to 1,300 acres. t.s.: not territorial. m.h.: 40 acres/population.	B																								2	1					
		F																								1	1					
		Rs																								1	1					
BIRDS																																
common loon	r.c.: 1-3/clutch t.s.: 15-100 acres. density: 2 loons/mi²	B				1			2		1		2		2							1										
		F	1	1			2		2		1	2	2	2																		
		Rs	2	1			2		2		1	2	2	2																		
pied-billed grebe	r.c.: 2-10/clutch. 1-2 broods/yr. h.r.: 1.5 acres (breeding). t.s.: 0.7 acres (breeding).	B		2				1		1	1		1	1																		
		F		2			2	2	1		1	1		1	1																	
		Rs		2			2	2	1		1	1		1	1																	
horned grebe		B																														
		F	2	1			2	2	2		1	2	2	2	2																	
		Rs		1			2	2	2		1	2	2	2	2																	
red-necked grebe		B																														
		F	1	1							2	2		2																		
		Rs	1	1							2	2		2																		
eared grebe		B																														
		F		1					2		1	2		2	1																	
		Rs		1					2		1	2		2	1																	
western grebe		B																														
		F	1	1							1		2																			
		Rs	1	1							1		2																			
double-crested cormorant	r.c.: 2-7/clutch. h.r.: 5-10 mile radius. t.s.: 2.5 ft²	B	1	1						2		2															1					
		F	1	1			2		2		2	2	2	2																		
		Rs	1	1	1	2	2		2		2		2									2				1						
American bittern	r.c.: 2-7/clutch.	B								1	1		1	1								1	2									
		F			2	1	2		2		2	1		1	1						1	2										
		Rs			2	1	2		2		2	1		1	1						1	2										
great blue heron	r.c.: 1-8/clutch. h.r.: 10 mile radius t.s.: immediate vicinity of nest.	B																														
		F		1	1	1	1	2	1	2	1	2	2	2	2		2	2				1	1	1								
		Rs			1	1																1	1	1								

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)						
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
AMPHIBIANS																																					
common garter snake	THSI	3	36	B				1	1	1	2	2		1	1	1	2	2	2							1	1	1	2	2	2	2	2	2			
				F				1	1	1	2	2		1	1	1	2	2	2							1	1	1	2	2	2	2	2	2			
				Rs				1	1	1	2	2		1	1	1	2	2	2							1	1	1	2	2	2	2	2	2			
western rattlesnake	CRVI	5	26	B	1	1	1	2	2	2				2	2	2		2	2	2					2	2	2					1	1	1	2	2	2
				F	1	1	1	2	2	2				2	2	2		2	2	2					2	2	2					1	1	1	2	2	2
				Rs	1	1	1	2	2	2				2	2	2		2	2	2					2	2	2					1	1	1	2	2	2
BIRDS																																					
common loon	GAIM	3	★	B																																	
				F																																	
				Rs																																	
pied-billed grebe	POPO	3	★	B																																	
				F																																	
				Rs																																	
horned grebe	POAU	3	★	B																																	
				F																																	
				Rs																																	
red-necked grebe	PODGR	3	★	B																																	
				F																																	
				Rs																																	
eared grebe	PODNI	3	★	B																																	
				F																																	
				Rs																																	
western grebe	AEOC	3	★	B																																	
				F																																	
				Rs																																	
double-crested cormorant	PHAU	3	★	B																																	
				F																																	
				Rs																																	
American bittern	BOLE	3	10	B																																	
				F																																	
				Rs																																	
great blue heron	ARHE	12	14	B								1	1				1																	1			
				F																																	
				Rs																							</										

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

[illegible]

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
great egret	CASAL	7	8	B													Winter resident, W. WA. and permanent resident W. OR. Uncommon Aug.- Apr., irregular May-July; may breed south of Coos Bay in OR.
				F													
				Rs													
green-backed heron	BUST	7	6	B													Permanent, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
black-crowned night-heron	NYNY	7	★	B													Summer resident, migrant; W. WA. Permanent resident; S.W. OR.
				F													
				Rs													
tundra (whistling) swan	CYCO	3	4	B													Winter and migrant populations; W. WA. and W. OR.; rare to uncommon.
				F													
				Rs													
trumpeter swan	CYBU	3	4	B													Winter and migrant populations, W. WA. and W. OR.; very rare to occasional.
				F													
				Rs													
greater white-fronted goose	ANAL	3	2	B													Winter and migrant populations, W. WA. and W. OR.; very rare to occasional.
				F													
				Rs													
snow goose	CHCA	3	2	B													Winter and migrant populations, Puget Sound and WA. and OR. coast; Willamette Valley, OR.; rare.
				F													
				Rs													
brandt	BRBE	3	★	B													Winter and migrant populations, Puget Sound and coastal areas of W. WA. and W. OR.
				F													
				Rs													
Canada goose	BRCA	3	8	B													Permanent, winter, migrant populations; W. WA. and W. OR.
				F													
				Rs													
wood duck	AISP	14	25	B													Permanent and summer populations; W. WA. and W. OR.
				F													
				Rs													
green-winged teal	ANCR	3	10	B													Rare breeder, W. WA., permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; □ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

★ Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

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Species √	Specific data √				Habitat use √	Special and unique habitats √																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features												
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
great egret					B																												
					F		2	1	1	2	2	1		1	1		1	1		2					1	2	2						
					Rs				1	1	2	2	1		1	1		1	1							1	2	2					
green-backed heron	r.c.: 3-9/clutch;1-2 broods/yr. t.s.: avg. 60 ft.				B																		1			1							
					F		2		1	2	1	1		1	1		1	1							2	1	1						
					Rs																		1										
black-crowned night-heron					B																												
					F		2		1	2	2	1		1	1	2	1	1		2					2	1	1						
					Rs					1	2	2		2	2	2										1	1						
tundra (whistling) swan					B																												
					F		1					1		1	2		2	2		1					1								
					Rs		1		1			1		1	2		2	2		1					1								
trumpeter swan					B																												
					F		1					1		1	2		2	2		1					1								
					Rs		1		1			1		1	2		2	2		1					1								
greater white-fronted goose					B																												
					F		1			2				2	2		2			1					1								
					Rs		1	1	1	2				2	2		2			1					1								
snow goose					B																												
					F		1				2			2	2		2	2		1													
					Rs		1	1	2			2		2	2		2	2		1													
brandt					B																												
					F	2	1																										
					Rs	2	1	1																									
Canada goose	r.c.: 2-11/clutch. h.r.: 2-10 mile radius (nesting), up to 30 mile radius winter). t.s.: 2.2 acres (nesting).				B					2				1	2	2	2	1							1								
					F		1			1		1		1	2	1	2	1		1					1	2							
					Rs		1	1	1	1		1		1	2	1	2	1		1					1	2							
wood duck	r.c.: 3-15/clutch. h.r.: up to 8 river miles for broods. t.s.: males defend immediate vicinity of mate. m.h.: 2 acres/pair.				B					1	1	2		1	2	2	2	2					2	2			1	1	2				
					F		2			1	1	1		1	1	2	1	1	2	2			2	2	2	2	1						
					Rs		2		2	1	1	2		2	2	2	2	2					2	2	2	2	1		2				
green-winged teal	r.c.: 5-18/clutch h.r.: 600 acres/pair.				B					2	2	1		1	1		1	1		2					1	2							
					F		1			1	2	1		1	1		1	1		1					1	2							
					Rs		1		1	1	2	1		1	1		1	1		1						1	2	2					

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					Dry hillsides		Mtn shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
					1 Grass-forb	1 Grass-forb		2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		Temperate coniferous forest	High temperate coniferous forest	Subalpine forest parks	Lodgepole pine (Cascades)	Shorepine (coast)	Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
							Herbaceous wetland	Hardwood and shrubby wetland						Coniferous wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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	1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1	Grass-forb		1

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* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 * * Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
mallard	ANPL	3	10	B													Permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
northern pintail	ANAC	3	8	B													Breeding limited; winter, migrant, and irregular permanent populations, W. WA. and W. OR.
				F													
				Rs													
blue-winged teal	ANDI	3	10	B													Summer and migrant populations W. WA. and W. OR.
				F													
				Rs													
cinnamon teal	ANCY	3	10	B													Summer, winter, migrant, and possible permanent populations; W. WA. and W. OR.
				F													
				Rs													
northern shoveler	ANCL	3	8	B													Local breeder; permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
gadwall	ANST	3	10	B													Winter, migrant, and irregular permanent populations; W. WA. and W. OR.
				F													
				Rs													
Eurasian wigeon	ANPE	3	5	B													Winter resident and migrant W. WA. and W. OR.
				F													
				Rs													
American wigeon	ANAAM	3	10	B													Local breeder W. WA., non-breeder W. OR.; winter, migrant, and irregular permanent populations; W. WA. and W. OR.
				F													
				Rs													
canvasback	AYVA	3	★	B													Winter, migrant, irregular summer, and/or permanent populations; W. WA. and W. OR. Common along Columbia River and coastal bays of Oregon, less common on Puget Sound and coastal bays of Washington.
				F													
				Rs													
redhead	AYAM	3	★	B													Migrant, winter, and irregular permanent population; W. WA. and W. OR.
				F													
				Rs													
ring-necked duck	AYCO	3	18	B													Rare breeder — high lakes, particularly in Mt. Hood area, OR.; winter, migrant, and irregular permanent populations; W. WA. and W. OR.; common in Willamette Valley, OR. and lower Columbia River.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

★ Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{1/}																													
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands			Edges					Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves				
BIRDS																																			
mallard	r.c.: 1-18/clutch, avg. 9. h.r.: 500-700 acres (breeding). t.s.: up to 40 acres.				B					1	2	1		1	1	2	1	1		1						1	2	2							
					F		1			1	2	1		1	1	2	1	1		1				1	2	2									
					Rs		1	2	1	1	2	1		1	1	2	1	1		1				1	2	2									
northern pintail	r.c.: 3-14/clutch. h.r.: 1200-2200 acres.				B					2		1		1	1		1	1		1					1										
					F		1			2		1		1	1		1	1		1				1											
					Rs		1		1	2		1		1	1		1	1		1				1											
blue-winged teal	r.c.: 6-16/clutch. h.r.: 17-64 acres (breeding).				B					2	1			1			1	1		1					1	2									
					F		2			2	2	1		1	1		1	1		1				1	2										
					Rs		2		1	2	2	1		1	1		1	1		1				1	2										
cinnamon teal	r.c.: 4-16/clutch. t.s.: 25 yards²				B					2	1		1	1		1	1		1					1	2										
					F		2			2	2	1		1	1	2	1	1		1				1	2										
					Rs		2			2	2	1		1	1	2	1	1		1				1	2										
northern shoveler	r.c.: 5-14/clutch. h.r.: 50 acres. t.s.: 7 acres (pre-nesting), 2 acres (nesting).				B					2	1	1		1	1		1	1		2				1											
					F		1			2	2	1		1	1		1	1		2				1											
					Rs		1		1	2	2	1		1	1		1	1		2				1											
gadwall	r.c.: 5-16/clutch. h.r.: 35-85 acres (breeding). t.s.: 40-60 yds. diameter (pre-nesting), (110-120 yds. diameter (nesting).				B						1	1	1		1	1		1	1		2			1											
					F		1			2		1		1	1		1	1		2				1											
					Rs		1		1	2		1		1	1		1	1		2				1											
Eurasian wigeon					B																														
					F		1				1		1	1		1	1		1				1	2											
					Rs		1		1		1		1	1		1	1		1				1	2											
American wigeon	r.c.: 3-13/clutch.				B						1		1	1		1	1		2				1	2											
					F		1				1		1	1		1	1		1				1	2											
					Rs		1		1		1		1	1		1	1		1				1	2											
canvasback					B																														
					F	2	1			2		1		1	2		2	2																	
					Rs	2	1			2		1		1	2		2	2																	
redhead					B																														
					F		1			2		2		1	1		1	2					2												
					Rs		1		1	2		2		1	1		1	2					2												
ring-necked duck	r.c.: 5-14/clutch. m.h.: up to 110 acres/pair.				B								1	1	2	1	2						2	1	1										
					F		2			2	2	1		1	1	2	1	2					2	1	1										
					Rs		2			2	2	1		1	1	2	1	2					2	1	1										

B-Breeding, F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{6/}	Plant communities and stand conditions ^{5/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Dry hillsides		Mtn. shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					1	Grass-forb		1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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mallard	ANPL	3	10	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↓	Habitat use ↓	Plant communities and stand conditions ↓																																						
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland												
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland						
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth									
BIRDS																																								
mallard	B																									1	1	2				1	2							
	F																										1	1	2				1	2						
	Rs																										1	1	2				1	2						
northern pintail	B																										1	1					1							
	F																										1	1					1							
	Rs																										1	1					1							
blue-winged teal	B																										1	1	2					1	2					
	F																										1	1	2					1	2					
	Rs																										1	1	2					1	2					
cinnamon teal	B																										1	2	2					2						
	F																										1	2	2					2						
	Rs																										1	2	2					2						
northern shoveler	B																										1	1					1							
	F																										1	1					1							
	Rs																										1	1					1							
gadwall	B																										1	1	2					1	2					
	F																										1	1	2					1	2					
	Rs																										1	1	2					1	2					
Eurasian wigeon	B																																							
	F																										1	1	2					1	2					
	Rs																										1	1	2					1	2					
American wigeon	B																										1	1	2					1	2					
	F																										1	1	2					1	2					
	Rs																										1	1	2					1	2					
canvasback	B																																							
	F																																							
	Rs																																							
redhead	B																																							
	F																																							
	Rs																																							
ring-necked duck	B																											2	2	2	2	2	2	2	2	2	2	2	2	2
	F																											2	2	2	2	2	2	2	2	2	2	2	2	
	Rs																												2	2	2	2	2	2	2	2	2	2	2	

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Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
greater scaup	AYMA	3	★	B													Winter, migrant, and occasional summer non-breeder populations; Puget Sound and coastal bays; W. WA. and W. OR.
				F													
				Rs													
lesser scaup	AYAF	3	★	B													Very local breeder; winter, migrant, and irregular summer populations; W. WA. and W. OR.
				F													
				Rs													
harlequin duck	HIHI	3	6	B													Breeds along streams in Olympics and Cascades; winters in rocky intertidal areas along the coast; permanent resident; W. WA. and W. OR.
				F													
				Rs													
oldsquaw	CLHY	3	★	B													Winter and migrant populations, irregular summer visitor; Puget Sound and coastal bays of WA. and OR.
				F													
				Rs													
common goldeneye	BUCL	14	★	B													Winter resident; W. WA. and W. OR.; Oct.- June, WA. and Nov.- Apr., OR.
				F													
				Rs													
Barrow's goldeneye	BUIS	14	9	B													Nests on high lakes of Cascades; permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
bufflehead	BUAL	14	9	B													Rare breeder in W. WA.; migrant and winter populations; W. WA. and W. OR.
				F													
				Rs													
hooded merganser	LOCUC	14	12	B													Permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
common merganser	MERME	14	9	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
ruddy duck	OXJA	3	★	B													Local breeder; permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
turkey vulture	CAAU	4	32	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

★ Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species √	Specific data √				Habitat use √	Special and unique habitats √																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features									
						Saltwater (ocean)	Es tuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Scups	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caes	
BIRDS																																
greater scaup					B																											
					F	2	1			2				1	2																	
					Rs	1	1			2				1	2																	
lesser scaup	r.c.: 6-15/clutch.				B						2		2	2	2	2																
					F	2	1			2	1		1	1	1	1																
					Rs	2	1			2	1		1	1	1	1																
harlequin duck	r.c.: 5-6/clutch. density: 1 pair/2-4 river miles.				B					1	1											1	1									
					F	2	1			1	1																					
					Rs			1		2	2														1	1						
oldsquaw					B																											
					F	1	2																									
					Rs	1	2																									
common goldeneye					B																											
					F	2	1			1	2	1		1	2	2	2	2														
					Rs	2	1			1	2	1		1	2	2	2	2														
Barrow's goldeneye	r.c.: 4-15/clutch, avg. 9.				B									1	1	1	1							1	1	2						
					F	2	1			2		2		1	1	1	1								1							
					Rs	2	1		2	2		2		1	1	1	1								1							
bufflehead	r.c.: 5-16/clutch, avg. 9. h.r.: 9-13 acres for broods. m.h.: 2.5 acres pond.				B									1	1	2	1							1	1							
					F	1	1			2	2	1		1	1	2	1								1							
					Rs	1	1			2	2	1		1	1	2	1								1							
hooded merganser	r.c.: 4-21/clutch, avg. 10. density: 2 broods/river mile.				B					1	1	1		1	1	2	1							1	1							
					F	2	2			1	1	1		1	1	2	1															
					Rs		2			1	1	2		1	2	2	2									1						
common merganser	r.c.: 6-17/clutch. h.r.: 2-3 river miles.				B					1	1	2		1	2		2							2	1	1	2					
					F		2			1	1	2		1	2		2															
					Rs		2			1	1	2		1	2		2								2	1						
ruddy duck	r.c.: 4-17/clutch. h.r.: avg. 225 yards. t.s.: 10 foot radius of female.				B									1	1		1	1														
					F		1				2		1	1	2	1	2															
					Rs		1				2		1	1	2	1	2															
turkey vulture	r.c.: 1-3/clutch.				B																					1	1		1			
					F				1	2	2										1	2	1	1	2	2						
					Rs																		2	2		2	2	2	2	1		2

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.





Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
					Dry hillsides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Grass-forb		Grass-forb		Shrub		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{4/}	Plant communities and stand conditions ^{2/}																																	
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland							
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland	
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
BIRDS																																			
greater scaup	B																																		
	F																																		
	Rs																																		
lesser scaup	B																																		
	F																																		
	Rs																																		
harlequin duck	B			1	1	1				1	1	1																			1	1	1		
	F			**	*					**	*																			**	*				
	Rs			1	1	1				1	1	1																		1	1	1			
oldsquaw	B																																		
	F																																		
	Rs																																		
common goldeneye	B																																		
	F																																		
	Rs																																		
Barrow's goldeneye	B					1	1					1	1																		1	1			
	F					**	*					**	*																**	*	**				
	Rs					1	1					1	1																	1	1				
bufflehead	B					1	1					1	1																		1	1			
	F					**	*					**	*																**	*	**				
	Rs					1	1					1	1																		1	1			
hooded merganser	B					1	1					1	1																		1	1			
	F					**	*					**	*																**	*	**				
	Rs					1	1					1	1																		1	1			
common merganser	B					1	1					1	1																		1	1			
	F					**	*					**	*																**	*	**				
	Rs					1	1					1	1																		1	1			
ruddy duck	B																																		
	F																																		
	Rs																																		
turkey vulture	B	2	2				2	2	2			2	2	2					2	2	2						2	2	2			2			
	F	1	2				1	2				1	2					1	2				1	1	2			1	2						
	Rs	2	2				1	2	2			1	2	2				1	2	2			1	2	2			1	2	2		1			

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
osprey	PAHA	12	10	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
black-shouldered (white-tailed) kite	ELCA	11	20	B													Accidental in W. WA.; permanent resident, coast and valleys of W. OR.; rare.
				F													
				Rs													
bald eagle	HALE	12	19	B													Permanent and winter populations; W. WA. and W. OR.; classified as threatened.
				F													
				Rs													
northern harrier (marsh hawk)	CICY	5	13	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
sharp-shinned hawk	ACST	11	33	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
Cooper's hawk	ACCO	11	32	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
northern goshawk	ACGE	11	19	B													Permanent resident; W. WA. and W. OR.; inhabits heavily forested areas.
				F													
				Rs													
red-shouldered hawk	BULI	12	18	B													Permanent and summer resident; S.W. OR.; very rare.
				F													
				Rs													
red-tailed hawk	BUJA	12	29	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
rough-legged hawk	BULA	5	9	B													Winter and migrant populations; W. WA. and W. OR.
				F													
				Rs													
golden eagle	AQCH	4	17	B													Rare breeder; permanent resident; W. WA. and W. OR.
				F													
				Rs													

 B-Breeding;
  F-Feeding;
  Rs-Resting;
  See comments and Chapter 3 narrative.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
osprey	r.c.: 2-4/clutch, avg. 3. h.r.: 5-6 miles from nest.				B																						1	1					
					F	1	1			1	2	2		1	2	1	2											1					
					Rs																							1	1				
black-shouldered (white-tailed) kite	r.c.: 3-6/clutch. h.r.: 2 mile radius (breeding). 0.5 mile (non-breeding). t.s.: 25 acres. m.h.: 20 acres/pair.				B																												
					F													2		1	2		1	2									
					Rs																	2	1										
bald eagle	r.c.: 1-3/clutch, some breed once/2 years. h.r.: 4 mile radius. t.s.: 0.5 mile radius of nest.				B																							1					
					F		1	1	1	1	1		1	2	1	2	2		2			2	1	1	1								
					Rs																	2	2			1	1						
northern harrier (marsh hawk)	r.c.: 3-12/clutch, avg. 5. h.r.: 240-2200 acres (breeding), 30-640 acres (winter). t.s.: up to 70 acres.				B					2		2		2	2		2	1		1	2			2									
					F					2		2		2	2		2	1		1	2			1	2								
					Rs					2		2		2	2		2	1		1	2			1	2								
sharp-shinned hawk	r.c.: 3-8/clutch. h.r.: 250 acres. t.s.: 250 acres. density: 1 nest/10 mi².				B																												
					F					2	2	2		2	2		2	2			2	2	2						2				
					Rs																	2	2				2						
Cooper's hawk	r.c.: 2-6/clutch. h.r.: 700 acres. t.s.: 100 yard diameter around the nest.				B																							2					
					F					2	2	2		2	2		2	2				1	1			2		2					
					Rs																	1	1			2	2						
northern goshawk	r.c.: 1-5/clutch. h.r.: up to 15 mi². t.s.: up to 15 mi².				B																												
					F																	2	2						2				
					Rs																							2					
red-shouldered hawk	r.c.: 1-6/clutch. h.r., t.s.: up to 380 acres, (breeding). 1250 acres (winter).				B					1	1																	1					
					F																		1			1							
					Rs					1	1												1			1	2						
red-tailed hawk	r.c.: 1-5/clutch. h.r.: 1.5 mi². t.s.: up to 3 mi²/pair.				B					2	2	2	2	2	2	2	2	2				2	2			2				2			
					F													2	2		1	1	1							2	2		
					Rs					2	2	2	2	2	2	2	2	2	2			1	1			2	2						
rough-legged hawk					B																												
					F			2	2									1		1	2		2										
					Rs			2	2									2		2	2		2										
golden eagle	r.c.: 1-3/clutch, some breed once/2 yrs. h.r.: 4 mile radius. t.s.: 5.5-8.0 mi².				B																								2		2		
					F																1	1	1										
					Rs																	2	1	1				2		2			

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
					Dry hillside		Mtn. shrubland and chaparral		Deciduous hardwood				Red alder forest				Evergreen hardwood				Conifer- hardwood forest				Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					Grass-forb	Grass-forb	Shrub	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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B-Breeding, F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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**Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Seasonal occurrence and activity												Comments ^{6/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
American kestrel	FASP	14	30	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
merlin	FACO	11	17	B													Permanent, migrant, and winter populations; W. WA. and W. OR.
				F													
				Rs													
peregrine falcon	FAPE	4	20	B													Migrant, winter and permanent populations; W. WA. and W. OR.; rare; classified as endangered.
				F													
				Rs													
gyrfalcon	FARU	4	4	B													Rare winter resident or migrant; W. WA. and W. OR.
				F													
				Rs													
prairie falcon	FAME	4	10	B													Winter resident and irregular visitor; W. WA. and W. OR.; permanent resident and uncommon breeder in S.W. OR.
				F													
				Rs													
ring-necked pheasant	PHCO	5	27	B													Permanent resident, W. WA. and W. OR.; primarily agricultural lands; introduced.
				F													
				Rs													
spruce grouse	DECA	5	18	B													Permanent resident, high elevations of the northern Cascades; W. WA.; rare.
				F													
				Rs													
blue grouse	DEOB	5	29	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
white-tailed ptarmigan	LALE	4	8	B													Permanent resident, alpine zones of W. WA. Cascades.
				F													
				Rs													
ruffed grouse	BOUM	5	28	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
wild turkey	MEGA	5	20	B													Scattered populations; W. WA. and W. OR.; introduced.
				F													
				Rs													

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																													
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features												
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves				
BIRDS																																			
American kestrel	r.c.: 3-7/clutch. h.r.: 275 acres (breeding), 1100 acres (winter). t.s.: 275 acres (breeding), 375 acres (winter).				B					2	2	2		2	2	2									1	1			2	1		2			
					F					2	2	2		2	2	2	2	2		1	1	2	1	2	2							2			
					Rs					2	2	2		2	2	2							1	1			2	2		2					
merlin					B																														
					F		1	1	1	2	2	2		2	2	2	2	2		2	2	1	1	2	2	1									
					Rs		1	1	1	2	2	2		2	2	2	2	2		2	2	1	1	2	2	1	2								
peregrine falcon	r.c.: 2-6/clutch. h.r.: 7.5 mile radius of nest. t.s.: min. 100 ft. radius of nest. m.h.: 0.5 mile cliff.				B																										1				
					F		1	1	1	1	2	2					1		1	2	2	2	1	1	2			1	2						
					Rs																2	2			2	2		1	2						
gyrfalcon					B																														
					F		1	2			2						2		2	2			2												
					Rs		1	2			2																								
prairie falcon	r.c.: 3-4/clutch. h.r.: up to 4.5 mi² (winter). t.s.: 200-600 feet around nest.				B																										1		1		
					F												2		2	1	2	2									2				
					Rs																									1	2	1			
ring-necked pheasant	r.c.: 5-23/clutch. h.r.: 4-8 acres. t.s.: 2.5 acres/male. m.h.: 80 acres.				B																			1		2	1	2							
					F					2	2	2	2	2	2	2	2	2	2	2	1		2	1	2										
					Rs					2	2	2	2	2	2	2	2	2	2	2	1		2	1	2										
spruce grouse	r.c.: 4-14/clutch, avg. 7. h.r.: up to 750 acres. t.s.: up to 370 acres.				B																			1	1	1				1					
					F																1	1	1												
					Rs																	1	1	1						1					
blue grouse	r.c.: 3-16/clutch. h.r.: 30-285 acres. t.s.: up to 11 acres.				B																			1	1	1									
					F																1	1	1												
					Rs																	1	1	1						1					
white-tailed ptarmigan	r.c.: 3-16/clutch. t.s.: 16-46 acres, avg. 35 acres. density: up to 250/mi².				B																										1				
					F																1	1									1				
					Rs																										1				
ruffed grouse	r.c.: 6-15/clutch. h.r.: 7-27 acres (winter); up to 135 acres (pre-nest), up to 35 acres nesting. t.s.: 10-30 acres.				B					1	1	1	1										1	1	1	1	1	1		1					
					F					1	1	1	1				2		2	2	1	1	1	1	1	1									
					Rs					1	1	1	1				2		2	2	1	1	1	1	1	1		1							
wild turkey	r.c.: 8-20/clutch. h.r.: 230-1200 acres (winter), 160-900 acres (breeding). t.s.: males defend strutting grounds.				B																			2	2										
					F																2	2	2												
					Rs																								2	2					

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																					
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland											
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland					
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth								
BIRDS																																							
American kestrel	B					2	2					2	2					2	2					2															
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merlin	B																																						
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	Rs			2						2					2						2					2					2			2					
peregrine falcon	B	* *						* *						* *						* *																			
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prairie falcon	B																																						
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	Rs														2	2					2																		
ring-necked pheasant	B	2																						2					1	1				2					
	F	2	2																								2	2					2	2					
	Rs	2	2																								2	2					2	2					
spruce grouse	B							2	1	2	1	1	2	2	1	2	1	1	2	2	1	2	1	2	2	1	2	1											
	F							1	1	2	1	1	2	1	1	2	1	1	2	1	2	1	2	1	2	1													
	Rs							2	1	2	1	1	2	2	1	2	1	1	2	2	1	2	1	2	1														
blue grouse	B		1	1					1	1																	1	1			2	2							
	F	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
	Rs	2	1	1	1	1	1	2	1	1	1	1	1	1	1									2	1	1	1	2	2	2	2	2	2	2	2	2	2		
white-tailed ptarmigan	B														1	1							2																
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ruffed grouse	B		2	2	2	2	2																																
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wild turkey	B																																						
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* * Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Seasonal occurrence and activity												Comments ^{6/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
northern bobwhite	COVI	5	10	B													Scattered remnant populations; W. WA. and W. OR.; rare; introduced.
				F													
				Rs													
California quail	CACAL	5	22	B													Permanent resident; W. WA. and W. OR.; introduced in WA.
				F													
				Rs													
mountain quail	ORPI	5	32	B													Permanent resident; W. WA. and W. OR.; uncommon.
				F													
				Rs													
Virginia rail	RALI	3	10	B													Permanent resident; W. WA. and W. OR.; inhabit wetlands at all elevations.
				F													
				Rs													
sora	PORCA	3	10	B													Summer resident; W. WA. and W. OR.; possible permanent resident S.W. OR.; inhabits low elevation wetlands.
				F													
				Rs													
American coot	FUAM	3	10	B													Permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
sandhill crane	GRCA	3	4	B													Migrant; W. WA. and W. OR.; winter population; Sauvie Island, OR.; occasional summer resident in Oregon Cascades.
				F													
				Rs													
black-bellied plover	PLSQ	5	2	B													Non-breeding permanent, winter, and migrant populations; W. WA. and W. OR., primarily coastal.
				F													
				Rs													
lesser (American) golden-plover	PLDO	5	2	B													Fall and spring migrant; coastal WA and OR.; irregular inland; rare.
				F													
				Rs													
snowy plover	CHAL	3	★	B													Permanent, winter, and migrant populations; WA. and OR. coast.
				F													
				Rs													
semipalmated plover	CHSE	3	4	B													Occasional breeder; W. WA.; summer resident and migrant; WA. and OR. coast; rarely inland.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{2/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands			Edges					Habitat features																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Seasonal occurrence and activity												Comments ^{6/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
killdeer	CHVO	3	4	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
greater yellowlegs	TRME	3	2	B													Winter, migrant, and irregular summer populations; W. WA. and W. OR.
				F													
				Rs													
lesser yellowlegs	TRFL	3	2	B													Migrant; W. WA. and W. OR.
				F													
				Rs													
solitary sandpiper	TRSO	7	4	B													Rare to occasional migrant; W. WA. and W. OR.; usually at higher elevations.
				F													
				Rs													
willet	CASE	3	★	B													Winter, and migrant populations; Puget Sound and coastal WA. and OR.; irregular summer resident in W. OR.; rare.
				F													
				Rs													
wandering tattler	HEIN	3	★	B													Migrant, coastal WA. and OR.
				F													
				Rs													
spotted sandpiper	ACMA	3	4	B													Permanent, summer, and migrant populations; W. WA. and W. OR.; uses suitable habitat at all elevations.
				F													
				Rs													
whimbrel	NUPH	5	2	B													Winter, migrant, and non-breeding summer populations; common along WA. and OR. coast; less common in Puget Sound and inner valleys.
				F													
				Rs													
long-billed curlew	NUAM	3	2	B													Migrant and irregular summer resident; W. WA. and W. OR.
				F													
				Rs													
marbled godwit	LIFE	5	★	B													Migrant; primarily along WA. and OR. coast.
				F													
				Rs													
ruddy turnstone	AREIN	5	★	B													Rare winter resident and regular migrant; coastal WA. and OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

★ Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species √	Specific data √				Habitat use √	Special and unique habitats √																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
BIRDS																																
killdeer	r.c.: 2-5/clutch, avg. 4, some raise 2 broods.	B	1	1	1	1	2	2		1	1	2	2		1				1													
		F	1	1	1	1	1	1		1	1	1	1		1				1													
		Rs	1	1	1	1	1	1		1	1	1	1		1				1													
greater yellowlegs		B																														
		F	1	1	1	2	2	2		1	1	2	1	1	1				1													
		Rs	1	1	1	2	2	2		1	1	2	1	1	1				1													
lesser yellowlegs		B																														
		F	1	1	1	2	2	2		1	1	2	1	1	1				1													
		Rs	1	1	1	2	2	2		1	1	2	1	1	1				1													
solitary sandpiper		B																														
		F			1	1	1	2		1	1	2	1	1	1				1	2	2											
		Rs			1	1	1	2		1	1	2	1	1	1				1	2	2											
willet		B																														
		F	2	1																												
		Rs	2	1																												
wandering tattler		B																														
		F		1																												
		Rs		1																												
spotted sandpiper	r.c.: 3-4/clutch. h.r.: 0.25 miles shoreline/brood.	B			1	1	1	2		1	1	2	1	2	2				1	2												
		F	2	2	1	1	1	2		1	1	2	1	2	2				1	2												
		Rs	2	2	1	1	1	2		1	1	2	1	2	2				1	2												
whimbrel		B																														
		F	2	1		2				2	2		2						1													
		Rs	2	1		2				2	2		2						1													
long-billed curlew		B																														
		F		2		2				2	2		1	1	1				2													
		Rs		2		2				2	2		1	1	1				2													
marbled godwit		B																														
		F	1	1									2	2					2													
		Rs	1	1									2	2					2													
ruddy turnstone		B																														
		F	2	1																												
		Rs	2	1																												

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{8/}																																	
					Dry hillsides						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					Grass-forb		Mtn. shrubland and chaparral								Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)											
					1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2								
BIRDS																																						
killdeer	CHVO	3	4	B																																		
				F																																		
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greater yellowlegs	TRME	3	2	B																																		
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solitary sandpiper	TRSO	7	4	B																																		
				F																																		
				Rs																																		
willet	CASE	3	★	B																																		
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				Rs																																		
wandering tattler	HEIN	3	★	B																																		
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whimbrel	NUPH	5	2	B																																		
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long-billed curlew	NUAM	3	2	B																																		
				F																																		
				Rs																																		
marbled godwit	LIFE	5	★	B																																		
				F																																		
				Rs																																		
ruddy turnstone	AREIN	5	★	B																																		
				F																																		
				Rs																																		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
					BIRDS												
black turnstone	ARME	3	★	B												Winter resident; Puget Sound and coastal WA. and OR.; occasionally inland.	
				F													
				Rs													
surfbird	APVI	5	★	B												Winter resident and migrant; coastal WA. and OR.; rare in Puget Sound.	
				F													
				Rs													
red knot	CACANU	5	★	B												Migrant; WA. and OR. coast; rare inland.	
				F													
				Rs													
sanderling	CALAL	3	★	B												Migrant, winter resident, and irregular summer non-breeder; W. WA. and W. OR.; primarily Puget Sound and coastal areas.	
				F													
				Rs													
semipalmated sandpiper	CAPU	3	★	B												Migrant; WA. and Or. coast; a few reports from high elevation lakes in Cascades; rare.	
				F													
				Rs													
western sandpiper	CMAU	3	2	B												Migrant and winter resident; W. WA. and W. Or.	
				F													
				Rs													
least sandpiper	CAMI	3	2	B												Migrant; W. WA. and W. OR.; winter resident, coastal WA. and OR.	
				F													
				Rs													
Baird's sandpiper	CABA	5	2	B												Migrant, W. WA. and W. OR.; occasionally around high mountain lakes.	
				F													
				Rs													
pectoral sandpiper	CAMEL	5	2	B												Migrant; coastal WA. and OR.	
				F													
				Rs													
sharp-tailed sandpiper	CAAC	3	★	B												Fall migrant; coastal WA. and OR.; rare	
				F													
				Rs													
rock sandpiper	CAPT	3	★	B												Migrant and winter resident; Strait of Juan de Fuca, WA. and OR. coast; Sept-May in W. WA. and Nov-Apr in W. OR.	
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species √	Specific data √				Habitat use √	Special and unique habitats √																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal		Riparian				Wetlands		Edges				Habitat features																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
						Sa	water (ocean)	Es	tuary	Sa	water beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Dry hillsides		Mtn. shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					1 Grass-forb	2 Grass-forb		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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black turnstone	ARME	3	★	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																	
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland							
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland	
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth				
BIRDS																																			
black turnstone	B																																		
	F																																		
	Rs																																		
surfbird	B																																		
	F																																		
	Rs																																		
red knot	B																																		
	F																																		
	Rs																																		
sanderling	B																																		
	F																																		
	Rs																																		
semipalmated sandpiper	B																																		
	F																																		
	Rs																																		
western sandpiper	B																																		
	F																								2										
	Rs																								2										
least sandpiper	B																																		
	F																								1										
	Rs																								1										
Baird's sandpiper	B																																		
	F																								2										
	Rs																								2										
pectoral sandpiper	B																																		
	F																								2										
	Rs																								2										
sharp-tailed sandpiper	B																																		
	F																																		
	Rs																																		
rock sandpiper	B																																		
	F																																		
	Rs																																		

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Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
dunlin	CAALP	3	2	B													Migrant and winter resident; W. WA. and W. OR.; irregular summer non-breeders; primarily Puget Sound and coastal areas.
				F													
				Rs													
stilt sandpiper	CAHI	3	2	B													Fall migrant; W. WA. and W. OR.; rare.
				F													
				Rs													
buff-breasted sandpiper	TRSU	3	★	B													Fall migrant; primarily along WA. and OR. coast; occasionally inland; rare.
				F													
				Rs													
short-billed dowitcher	LIGR	3	★	B													Migrant and irregular summer non-breeder; W. WA. and W. OR.
				F													
				Rs													
long-billed dowitcher	LISC	3	2	B													Migrant, W. WA. and W. OR.
				F													
				Rs													
common snipe	GAGA	3	9	B													Summer, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
Wilson's phalarope	PHTR	3	4	B													May breed in southern Puget Sound, breeds in Willamette Valley, OR.; migrant and summer resident; W. WA. and W. OR.
				F													
				Rs													
red-necked (northern) phalarope	PHLO	3	★	B													Migrant and summer non-breeder; WA. and OR. coast; rare inland.
				F													
				Rs													
red phalarope	PHALFU	3	★	B													Migrant; Strait of Juan de Fuca and coastal WA. and OR.; rarely inland.
				F													
				Rs													
Franklin's gull	LAPI	3	★	B													Fall migrant; northern Puget Sound; irregular spring and summer visitor, W. WA. and W. OR.
				F													
				Rs													
Bonaparte's gull	LAPH	3	★	B													Migrant, winter, and irregular summer populations; W. WA. and W. OR.; primarily coastal.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

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See footnotes at end of appendix.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
BIRDS																																
dunlin					B																											
					F	1	1	2			2		2	2			2		1				1									
					Rs	1	1	2			2		2	2			2		1				1									
stilt sandpiper					B																											
					F	2	2	2			2		2	2			2	2					2									
					Rs	2	2	2			2		2	2			2	2					2									
buff-breasted sandpiper					B																											
					F	1	1										1		2				2									
					Rs	1	1										1		2				2									
short-billed dowitcher					B																											
					F	1	1	2			2		2	2			2	2					1									
					Rs	1	1	2			2		2	2			2	2					1									
long-billed dowitcher					B																											
					F	1	2	1			1		1	1			1	1					1									
					Rs	1	2	1			1		1	1			1	1					1									
common snipe	r.c.: 3-5/clutch. t.s.: up to 40 acres (pre-nesting), 1-3 acres (nesting). density: 28.7 birds/2.5 acres (spring), 680 birds/250 acres (winter).				B					2	2	1	1	1	1	2	1	1	1	1			1									
					F		2	1	2	2	1	1	1	1	2	1	1	1	1				1									
					Rs		2	1	2	2	1	1	1	1	2	1	1	1	1				1									
Wilson's phalarope	r.c.: 3-4/clutch. t.s.: females defend up to 10 yards radius of male.				B						2		2	2			1	1		1			1									
					F	1	2	1			2		2	2			1	1		1			1									
					Rs		2	1			2		2	2			1	1		1			1									
red-necked (northern) phalarope					B																											
					F	1	1	2					2	2			2	2														
					Rs	1	1	2					2	2			2	2														
red phalarope					B																											
					F	1	2	2																								
					Rs	1	2	2																								
Franklin's gull					B																											
					F	2		1	2		2		1	1	2	1																
					Rs	2		1	2		2		1	1	2	1																
Bonaparte's gull					B																											
					F	1	1	1	1	2			1	2	2	2																
					Rs	1	1	1	1	2			1	2	2	2																

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																							
					Dry hillside						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest					
					1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
					Grass-forb	Grass-forb	Shrub	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber
					1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
BIRDS																												
dunlin	CAALP	3	2	B																								
				F																								
				Rs																								
stilt sandpiper	CAHI	3	2	B																								
				F																								
				Rs																								
buff-breasted sandpiper	TRSU	3	★	B																								
				F																								
				Rs																								
short-billed dowitcher	LIGR	3	★	B																								
				F																								
				Rs																								
long-billed dowitcher	LISC	3	2	B																								
				F																								
				Rs																								
common snipe	GAGA	3	9	B																								
				F																								
				Rs																								
Wilson's phalarope	PHTR	3	4	B																								
				F																								
				Rs																								
red-necked (northern) phalarope	PHLO	3	★	B																								
				F																								
				Rs																								
red phalarope	PHALFU	3	★	B																								
				F																								
				Rs																								
Franklin's gull	LAPI	3	★	B																								
				F																								
				Rs																								
Bonaparte's gull	LAPH	3	★	B																								
				F																								
				Rs																								

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																																			
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland									
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	Herbaceous wetland	1 Grass-forb	2 Shrub	3 Open sap-pole and shrubby wetland	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth			
BIRDS																																					
dunlin	B																																				
	F																					2															
	Rs																					2															
stilt sandpiper	B																																				
	F																					2															
	Rs																					2															
buff-breasted sandpiper	B																																				
	F																																				
	Rs																																				
short-billed dowitcher	B																																				
	F																																				
	Rs																																				
long-billed dowitcher	B																																				
	F																					2															
	Rs																					2															
common snipe	B																					1	1					1									
	F																					1	1	2				1	2								
	Rs																					1	1	2				1	2								
Wilson's phalarope	B																					2															
	F																					2															
	Rs																					2															
red-necked (northern) phalarope	B																																				
	F																																				
	Rs																																				
red phalarope	B																																				
	F																																				
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Franklin's gull	B																																				
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	Rs																																				
Bonaparte's gull	B																																				
	F																																				
	Rs																																				

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Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
Heermann's gull	LAHE	3	★	B													Summer visitor, occasional in winter; common coast, rare inland; W. WA. and W. OR.
				F													
				Rs													
mew gull	LARCAN	3	★	B													Migrant and winter resident; Puget Sound, WA., Oregon coast, and lower Columbia River.
				F													
				Rs													
ring-billed gull	LADE	3	★	B													Regular breeding colonies; Gray's Harbor and Willapa Bay; winter, migrant, and permanent populations; W. WA. and W. OR.
				F													
				Rs													
California gull	LACAL	3	★	B													Permanent, winter, and migrant populations, W. WA. and W. OR.
				F													
				Rs													
herring gull	LAAR	3	★	B													Migrant and winter resident; W. WA. and W. OR.
				F													
				Rs													
Thayer's gull	LATH	3	★	B													Migrant and winter resident; Puget Sound, WA., Oregon coast, and lower Columbia River; occasional summer non-breeder.
				F													
				Rs													
western gull	LAOC	3	★	B													Permanent resident along WA. and OR. coast, rare inland; islands important for nesting.
				F													
				Rs													
glaucous-winged gull	LAGL	3	★	B													Breeds south to Destruction Island in Washington. Also breeds along the northern Oregon coast; permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
glaucous gull	LAHY	3	★	B													Migrant and winter resident, Puget Sound, WA., Oregon coast, and along the Columbia River; rare.
				F													
				Rs													
Sabines gull	XESA	3	★	B													Migrant; Puget Sound and WA. and OR. coast; usually remains offshore.
				F													
				Rs													
Caspian tern	STERCA	3	★	B													Migrant and summer resident, W. WA. and W. OR.; increasing in W. WA.
				F													
				Rs													

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Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
Heermann's gull					B																												
					F	1	1	1	2					2																			
					Rs	1	1	1	2					2																			
mew gull					B																												
					F	1	1	1	2	1				2	2	2				2													
					Rs	1	1	1	2	1				2	2	2				2													
ring-billed gull	r.c.: 1-5/clutch, avg. 3.			B		1																											
				F	2	1	1	1	2		2		2		2		2		1				2						2				
				Rs	2	1	1	1	2		2		2		2		2		1				2					2					
California gull					B																												
					F	1	1	1	1	1				1		2				1				2									
					Rs	1	1	1	1	1				1		2				1				2									
herring gull					B																												
					F	1	1	1	1	1				1		2		2		2				2									
					Rs	1	1	1	1	1				1		2		2		2				2									
Thayer's gull					B																												
					F	2	1	1	2	2				2		2		2		2													
					Rs	2	1	1	2	2				2		2		2		2													
western gull	r.c.: 1-4/clutch. t.s.: 220 yards² (nesting).			B	1	2	1																	2						2			
				F	1	1	1	2	2					2		2		2															
				Rs	1	1	1	2	2					2		2		2						2					2				
glaucous-winged gull	r.c.: 2-4/clutch. t.s.: 2 foot diameter (winter), 170 ft² (nesting).			B	1		1																	2						1			
				F	1	1	1	1	2					2		2		2		2													
				Rs	1	1	1	1	2					2		2		2		2				2					1				
glaucous gull					B																												
			F	1	1	1	2	2					2																				
			Rs	1	1	1	2	2					2																				
Sabines gull					B																												
			F	1	2	2	2						2																				
			Rs	1	2	2	2						2																				
Caspian tern	r.c.: 2-3/clutch. t.s.: 0.25-1.5 yard radius of nest.			B		1	1																										
				F	1	1	1	2	2					2				2															
				Rs	1	1	1	2	2					2				2															

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																										
					Dry hillsides		Mtn shrubland and chaparral		Deciduous hardwood				Red alder forest		Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)								
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
BIRDS																															
Heermann's gull	LAHE	3	★	B																											
				F																											
				Rs																											
mew gull	LARCAN	3	★	B																											
				F																											
				Rs																											
ring-billed gull	LADE	3	★	B																											
				F																											
				Rs																											
California gull	LACAL	3	★	B																											
				F																											
				Rs																											
herring gull	LAAR	3	★	B																											
				F																											
				Rs																											
Thayer's gull	LATH	3	★	B																											
				F																											
				Rs																											
western gull	LAOC	3	★	B																											
				F																											
				Rs																											
glaucous-winged gull	LAGL	3	★	B																											
				F																											
				Rs																											
glaucous gull	LAHY	3	★	B																											
				F																											
				Rs																											
Sabines gull	XESA	3	★	B																											
				F																											
				Rs																											
Caspian tern	STERCA	3	★	B																											
				F																											
				Rs																											

B-Breeding; F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

[illegible]

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
common tern	STHI	3	★	B													Migrant and summer non-breeding populations; primarily Puget Sound, WA. and Oregon coast.
				F													
				Rs													
Arctic tern	STPA	3	★	B													Small breeding colony on Jetty Island, Everett, WA.; migrant and summer populations; Puget Sound and coastal WA. and OR.; usually migrates offshore.
				F													
				Rs													
Forster's tern	STFO	3	★	B													Migrant and irregular summer visitor; W. WA. and W. OR.; regularly reported in Gray's Harbor and Willapa Bay; rare.
				F													
				Rs													
black tern	CHNI	3	4	B													Breeds in the Willamette Valley, OR.; migrant and summer resident; W. WA. and W. OR.
				F													
				Rs													
marbled murrelet	BRMA	12	6	B													Permanent resident; Puget Sound and WA. and OR. coast.
				F													
				Rs													
rock dove	COLI	4	★	B													Primarily urban areas; permanent resident; W. WA. and W. OR.; introduced.
				F													
				Rs													
band-tailed pigeon	COFA	11	32	B													Summer migrant and irregular winter populations; W. WA. and W. OR.; uses mineral springs, minerals essential to reproduction.
				F													
				Rs													
mourning dove	ZEMA	11	28	B													Permanent, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
common barn-owl	TYAL	14	22	B													Permanent resident, W. WA. and W. OR.; uses old barns and buildings for nesting; low elevation around agricultural lands.
				F													
				Rs													
western screech-owl	OTKE	14	35	B													Permanent resident; W. WA. and W. OR.; lower elevation.
				F													
				Rs													
great horned owl	BUVI	12	35	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding, ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{2/}	Special and unique habitats ^{2/}																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features									
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
BIRDS																																
common tern					B																											
					F	1	1	1	1	1					2		2															
					Rs	1	1	1	1	1					2		2															
Arctic tern	r.c.: 1-3/clutch.				B			2																								
					F	1	2	2	2	2				2																		
					Rs	1	2	2	2	2				2																		
Forster's tern					B																											
					F		2	2																								
					Rs		2	2																								
black tern	r.c.: 1-4/clutch, avg. 3. h.r.: within few hundred yards of nest. t.s.: nests less than 33 yards apart.				B						2		2		1	1					2											
					F		2	2	2	2		2		2	2		1	1		1			1									
					Rs		2	2	2	2		2		2	2		1	1		1			1									
marbled murrelet	r.c.: 1-2/clutch. h.r.: within 550 yards of shore.				B																			1								
					F	1	1	2		2	2															1						
					Rs	1	1	2		2	2															1						
rock dove	r.c.: 1-2/clutch, 1-3 broods/yr.				B																							1				
					F			1																								
					Rs																								1			
band-tailed pigeon	r.c.: 1-2/clutch, 1-2 broods/yr. t.s.: up to 1 mile radius of nest.				B																1	1										
					F		2	2	1	1		1	1								1	1	1									
					Rs			2														1	1	1								
mourning dove	r.c.: 1-4/clutch, avg. 2; 3-4 broods/year. h.r.: 1 mile radius. t.s.: 30-100 yard diameter around nest.				B																2	2	1		2	2						
					F					2	2	2	2	2	2		2	2	2	2	1	2	1	1	2	2						
					Rs																	2	2	1		2	2					
common barn-owl	r.c.: 3-12/clutch, 1-2 broods/yr. h.r.: 8.5 mi². t.s.: 5-10 yards from nest.				B																1	1				1	2		2			
					F						2	2						2	2	1		1	1	1								
					Rs																	1	1					2		2		2
western screech-owl	r.c.: 2-8/clutch.				B					2	1	2		2	2	2					1	1			2	1						
					F					2	1	2		2	2	2	2	2	1	2	1	1	1	1		2						
					Rs					2	1	2		2	2	2						2	1	1		2	1					
great horned owl	r.c.: 1-6/clutch. h.r.: 3,000 acres. t.s.: 60-260 acres. density: 0.1-0.2 pairs/mi².				B					1	2	2		2	2	2					1	1			2	2		2		2		
					F		2		2	2	2	2		2	2	2	2	2	2	2	2	1	1	1	2	2	2			2		
					Rs					1	2	2		2	2	2							1	1			2	2		2		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																															
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer. hardwood forest						Mixed coniferous forest (SW Oregon)					
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	
BIRDS																																				
common tern	STHI	3	★	B																																
				F																																
				Rs																																
Arctic tern	STPA	3	★	B																																
				F																																
				Rs																																
Forster's tern	STFO	3	★	B																																
				F																																
				Rs																																
black tern	CHNI	3	4	B																																
				F																																
				Rs																																
marbled murrelet	BRMA	12	6	B																																
				F																																
				Rs																																
rock dove	COLI	4	★	B																																
				F																																
				Rs																																
band-tailed pigeon	COFA	11	32	B						2	1	1	1			2	1			2	1	1	1			2	1	1	1			2	1	1	1	
				F		2	1	2	1	2	2	2	2	2	1	2	2	2	1	2	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2
				Rs			1		1	2	1	1	1		1	2	1		1	2	1	1	1		1	2	1	1	1			2	1	1	1	
mourning dove	ZEMA	11	28	B			2		2	1	1	1	2		2	2	2									2	1	1	1	2		2	1	1	1	2
				F	2	2	2	1	2	1				2	2	2								1	2	1				1	2	1				
				Rs			2		2	1	1	1	2		2	2	2								2	1	1	1	2		2	1	1	1	2	
common barn-owl	TYAL	14	22	B								2	2									2	2					2	2				2	2		
				F	1	1		1	2					1	2			1	2						1	2				1	2					
				Rs							2	2	2										2	2				2	2				2	2		
western screech-owl	OTKE	14	35	B								1	1				2					2	2				2	2				2	2			
				F	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
				Rs			2			2	2	1	1			2	1				2	2	2	2			2	2	2			2	2	2	2	
great horned owl	BUVI	12	35	B								1	1									1	1				1	1				1	1			
				F	1	1	2	1	2	2		2	2	1	2			1	2			2	2	1	2	2		2	2	1	2	2		2	2	
				Rs								1	1			2						1	1					1	1				1	1		

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																				
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland										
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth					
BIRDS																																						
common tern	B																																					
	F																																					
	Rs																																					
Arctic tern	B																																					
	F																																					
	Rs																																					
Forster's tern	B																																					
	F																																					
	Rs																																					
black tern	B																																					
	F																																					
	Rs																																					
marbled murrelet	B					2	1																									2	1					
	F																																					
	Rs					2	1																									2	1					
rock dove	B																																					
	F																																					
	Rs																																					
band-tailed pigeon	B								2	2	2	2			2	2	2	2									2	1	1	1		2	1	1	1			
	F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			1	2	1	1	1	1	1	2	1	1	1			
	Rs							2	2	2	2	2		2	2	2	2	2		2	2	2			1	2	1	1	1	1	1	2	1	1	1			
mourning dove	B		2	2	2	2	2															2				2	1	1	1	2		2	2	2	2	2		
	F	2	2	2																		2	2	2	2	1	2	1			2	2	2					
	Rs		2	2	2	2	2															2			2	1	1	1	2		2	2	2	2	2	2		
common barn-owl	B					2	2																						2	2								
	F	1	2																				1	2		1	2				1	2						
	Rs					2	2																						2	2								
western screech-owl	B					2	2					2	2					2	2				2										1	1		1	1	
	F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
	Rs			2	2	2	2		2	2	2	2		2	2	2	2		2		2			2			2	2	1	1		2	2	1	1			
great horned owl	B					1	1					1	1				2	2				2											2	2			2	2
	F	1	2	2		2	2	1	2	2		2	2	1	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Rs					1	1					1	1				2	2				2					2	1	1				2	2	2			2

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
northern pygmy-owl	GLGN	14	36	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
burrowing owl	ATCU	15	★	B													Breeds in Rogue Valley, OR.; winter resident and irregular visitor in areas of coastal WA. and OR.; inhabits valley floors.
				F													
				Rs													
spotted owl	STOC	14	12	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
barred owl	STVA	14	21	B													Permanent resident; W. WA.; increasing, spreading north to south.
				F													
				Rs													
long-eared owl	ASOT	11	26	B													Winter, migrant, and irregular permanent resident; W. WA. and W. OR.
				F													
				Rs													
short-eared owl	ASFL	5	9	B													Permanent resident; W. WA. and W. OR.; primarily lowland valleys and the coastal zone.
				F													
				Rs													
northern saw-whet owl	AEAC	14	30	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
common nighthawk	CHMI	6	37	B													Summer and migrant populations; W. WA. and W. OR.
				F													
				Rs													
common poorwill	PHNU	6	16	B													Nests in S.W. Oregon valleys; summer resident W. WA. and W. OR.; accidental in W. WA. and N.W. OR.
				F													
				Rs													
black swift	CYNI	4	20	B													Breeds in W. WA.; summer and migrant populations; W. WA. and W. OR.; rare; often seen with Vaux's swift.
				F													
				Rs													
Vaux's swift	CHVA	14	34	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species √	Specific data √				Habitat use √	Special and unique habitats √																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands				Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
northern pygmy-owl	r.c.: 2-7/clutch. h.r., t.s.: 0.75 mile radius.	B							2	2	2			2	2												1						
		F							2	2	2			2	2		2	2				2	1	1			2						
		Rs							2	2	2			2	2									1	1				1				
burrowing owl	r.c.: 2-11/clutch. h.r., t.s.: 0.1-4.0 acres, avg. 2 acres.	B																															
		F			2																												
		Rs			2																												
spotted owl	r.c.: 1-4/clutch, avg. 2. h.r.: 3.5-5.3 mi², avg. 4.5 mi². t.s.: 100-340 acres, avg. 230 acres. density: 1 pair/mi² of old growth.	B																										2					
		F																								2							
		Rs																										2					
barred owl	r.c.: 2-4/clutch. h.r.: 600 acres.	B																										1					
		F																										2					
		Rs																										1					
long-eared owl	r.c.: 3-10/clutch. h.r.: 84-260 acres.	B						1		1		2	2																				
		F						2	2	2		2	2					1	2	1	1	2											
		Rs						1	2	1		2	2								1	1											
short-eared owl	r.c.: 4-14/clutch, avg. 6. h.r.: 3.5 mile radius. t.s.: 50-250 acres.	B			2	2	2		1								1		1	1			1										
		F			2	2	2		1								1		1	1			1	2									
		Rs			2	2	2		1								1		1	1			1										
northern saw-whet owl	r.c.: 3-7/clutch. h.r.: 100 acres.	B																					1	1				1					
		F																					1	1									
		Rs																					1	1				2					
common nighthawk	r.c.: 2/clutch. h.r.: 0.5 mile diameter. t.s.: 10-60 acres, avg. 25 acres.	B			2	2	2	2	2		2	2	2									1	1	1	1	1	1			1			
		F			2	1	1	2	1		1	1	2	1	1		1	1	1	1	1	1	1	1	1								
		Rs			2	1	2	2	2		2	2	2								1	1	1	1	1	1			1				
common poorwill	r.c.: 2/clutch.	B																				1	2	2				1		2			
		F																				1	1	1					2				
		Rs																				1	1	1				1		2			
black swift	r.c.: 1/clutch.	B					2	2		2																			1		1		
		F		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			2	2				
		Rs					2	2		2																		1					
Vaux's swift	r.c.: 3-7/clutch.	B																				1	1			2	1						
		F				2	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	2	2	2									
		Rs																			1	1			2	1							

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer. hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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northern pygmy-owl	GLGN	14	36	B							2	2	2				2				2	2	2				2	2	2				2	1	1				2	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat

Species ↴	Habitat use ↴	Plant communities and stand conditions ^{8/}																																							
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland													
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	Herbaceous wetland	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	
BIRDS																																									
northern pygmy-owl	B				2	1	1				2	1	1				2	2	2				2				2					2	2	2				2	2	2	
	F	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Rs				2	1	1				2	1	1				2	2	2				2				2				2						2	2	2		
burrowing owl	B																																								
	F																																								
	Rs																																								
spotted owl	B						1						1																												
	F				2	2	1				2	2	1																												
	Rs					2	1					2	1																												
barred owl	B				2	1	1				2	1	1																								2	1	1		
	F				2	1	1				2	1	1																							2	1	1			
	Rs				2	1	1				2	1	1																							2	1	1			
long-eared owl	B										2	2	2				2	2	2				2														1	1	2		
	F	1	1	2				1	2	2				1	1	2				1	1	2					1	1	1	2				1	1	2					
	Rs			2	2	2	2			2	2	2	2			2	2	2	2			2	2							1	1	1	2			1	1	1	2		
short-eared owl	B																										1	2						2							
	F																									1	2	2					2	2							
	Rs																									1	2						2								
northern saw-whet owl	B					2	1					2	1										2														2	1			
	F	1	2	2	2	1	1	1	2	2	2	1	1						1	2	2	2	1	2		2	2	2	2	2	2	2	2	2	1	2	2	2	1		
	Rs					2	1					2	1										2												2	1		1			
common nighthawk	B	1	1					1	1					1	1					1	1		2	2			1	1						1	1						
	F	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	1	1	2	2	2	2		
	Rs	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	1	1	2	2	2	2			
common poorwill	B																																								
	F																																								
	Rs																																								
black swift	B																																								
	F	2	2	2	2	2	2	2	2	2	2	2	2							2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
	Rs																																								
Vaux's swift	B					2	1					2	1					2	2				2															2	2		
	F	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1		
	Rs					2	1					2	1					2	2				2														2	2			

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
Anna's hummingbird	CAAN	7	25	B													Winter, summer, and permanent populations, W. WA. and W. OR.; maintained during winter by feeders.
				F													
				Rs													
calliope hummingbird	STELCA	7	22	B													Breeds only in S.W. OR.; migrant and summer resident; W. WA. and W. OR.
				F													
				Rs													
rufous hummingbird	SERUF	11	37	B													Summer and migrant populations; W. WA. and W. OR.
				F													
				Rs													
Allen's hummingbird	SESA	7	28	B													Summer resident; W. WA. and W. OR., primarily along coast; extremely rare except for S.W. OR. where it may breed.
				F													
				Rs													
belted kingfisher	CEAL	16	★	B													Permanent resident; W. WA. and W. OR.; nest in burrows in earth banks.
				F													
				Rs													
Lewis' woodpecker	MELE	13	17	B													Breeds in W. OR.; summer and fall resident W. WA. and most of W. OR.; permanent resident; Columbia River and Willamette Valley of W. OR.
				F													
				Rs													
acorn woodpecker	MEFO	13	16	B													Permanent resident of oak forests in W. OR.
				F													
				Rs													
red-breasted sapsucker	SPRU	13	26	B													Permanent resident; W. WA. and W. OR.; feeds on sap of live trees.
				F													
				Rs													
Williamson's sapsucker	SPTH	13	15	B													Siskiyou of S.W. OR.; few sitings in W. WA. or W. OR.
				F													
				Rs													
downy woodpecker	PIPU	13	21	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
hairy woodpecker	PIVI	13	22	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{1/}																												
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features													
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves			
BIRDS																																		
Anna's hummingbird	r.c.: 1-3/clutch, 1-3 broods/year. h.r.: 50-600 yard radius from territory. t.s.: 0.25-0.5 acre core, 5-15 acre buffer.	B																						1	1	2		2						
		F																						1	1	2		2						
		Rs																							1	1	2		2					
calliope hummingbird	r.c.: 2/clutch, may raise 2 broods. density: 4 pairs/6 acres.	B																																
		F																							1	1	1		1					
		Rs																										1						
rufous hummingbird	r.c.: 2/clutch, may raise 2 broods. t.s.: up to 121 ft².	B																								1	1							
		F					2	2	2		2	2													1	1	1	1						
		Rs																										1	1					
Allen's hummingbird	r.c.: 2/clutch, may raise 2 broods.	B																								1								
		F																								2	1							
		Rs																										1						
belted kingfisher	r.c.: 5-14/clutch, avg. 7. h.r.: up to 5 mile radius from nest. t.s.: 0.5 miles shoreline. density: 1 pair/1.75 mi².	B					1	1	1		1	1	1															1	1	1		1		
		F		1	1	1	1	1	1		1	1	1		1	1											1	1	1					
		Rs		1	1	1	1	1	1		1	1	1		1	1											1	1	1	1		1		
Lewis' woodpecker	r.c.: 5-9/clutch. t.s.: up to 15 acres.	B																								1	1				1			
		F																								1	1				2	1		
		Rs																									1	1				1		
acorn woodpecker	r.c.: 5-6/clutch. h.r., t.s.: 6-15 acres.	B																								2	1				1			
		F																								2	1					2		
		Rs																									2	1				1		
red-breasted sapsucker	r.c.: 3-7/clutch. h.r.: avg. 5 acres. t.s.: up to 15 acres.	B					1	1	1																	2	2			2	1			
		F					1	1	1																	2	2			2	2			
		Rs					1	1	1																		2	2			2	1		
Williamson's sapsucker	r.c.: 3-7/clutch. h.r., t.s.: 12-22 acres, avg. 17 acres.	B																													1			
		F																																

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																											
					Dry hill-sides		Mtn shrubland and chaparral		Deciduous hardwood				Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)																							
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth													
BIRDS																																																
Anna's hummingbird	CAAN	7	25	B			1		1	1		2	2		1	1																																
				F	2	1	1	1	1	1		2	2	1	1	1		1	1	1									1	1	1																	
				Rs			1		1	1		2	2		1	1																																
calliope hummingbird	STELCA	7	22	B			2																																									
				F	1	2	2																																									
				Rs			2																																									
rufous hummingbird	SERUF	11	37	B			2		1	1	2	2			1	1	2																															
				F	1	1	1	1	1	2		2	2	2	1	1													1	1	1		2	2	1	1	1		2	2								
				Rs			2		1	1	2	2			1	1	2														1	1	2	2	2		1	1	2	2	2							
Allen's hummingbird	SESA	7	28	B			1		1	1		2																																				
				F	1	1	1	1	1	1		2	1	1	1			1	1	1										1	1	1		2	1	1	1											
				Rs			1		1	1		2	1	1	1																1	1			2		1	1										
belted kingfisher	CEAL	16	*	B																																												
				F																																												
				Rs																																												
Lewis' woodpecker	MELE	13	17	B								1	1																																			
				F	2	2	2	2	1	1		1	1																		2	2	2	2	2	2	2	2	2	2	2	1	1		2	2		
				Rs									1	1																																		
acorn woodpecker	MEFO	13	16	B								1	1																																			
				F		2	2	2	1	2		1	1																																			
				Rs									1	1																																		
red-breasted sapsucker	SPRU	13	26	B								2	2																																			
				F								2	2	2	2			2	2																													
				Rs									2	2				2																														
Williamson's sapsucker	SPTH	13	15	B																																												
				F																																												
				Rs																																												
downy woodpecker	PIPU	13	21	B							1	1	2																																			
				F							2	1	1	2			2	1																														
				Rs								1	1	2				1																														
hairy woodpecker	PIVI	13	22	B																																												
				F																																												
				Rs																																												

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ^{a/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	Herbaceous wetland	2 Grass-forb	Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Anna's hummingbird	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
white-headed woodpecker	PIAL	13	12	B													Permanent resident; S.W. OR.
				F													
				Rs													
three-toed woodpecker	PITR	13	15	B													Rare permanent resident of W. WA. and W. Oregon Cascades.
				F													
				Rs													
black-backed woodpecker	PIAR	13	16	B													Rare straggler west of the Cascades in W. WA. and W. OR.; possible resident of the Olympic and Gifford Pinchot National Forests; resident of the Siskiyou Mts.; S.W. OR.
				F													
				Rs													
northern flicker	COAU	13	33	B													Permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
pileated woodpecker	DRPI	13	27	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
olive-sided flycatcher	COBO	10	24	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
western wood-pewee	COSO	11	29	B													Summer and migrant populations; W. WA. and W. OR.
				F													
				Rs													
willow flycatcher	EMTR	7	20	B													Summer and migrant populations; W. WA. and W. OR.
				F													
				Rs													
Hammond's flycatcher	EMHA	11	26	B													Summer resident, W. WA. and W. OR.; primarily higher elevations.
				F													
				Rs													
dusky flycatcher	EMOB	8	15	B													Breeds S.W. OR.; accidental summer resident W. WA. and W. OR.; primarily higher elevations.
				F													
				Rs													
western flycatcher	EMDI	11	24	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species √	Specific data √				Habitat use √	Special and unique habitats √																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
BIRDS																																
white-headed woodpecker	r.c.: 3-7/clutch. t.s.: 20 acres/pair.				B																							1				
					F																							1	2			
					Rs																							1				
three-toed woodpecker	r.c.: 3-6/clutch, avg. 4. t.s.: 75-106 acres.				B																							1				
					F																							1	1			
					Rs																							1				
black-backed woodpecker	r.c.: 2-6/clutch, avg. 4. h.r.: 440 yards from nest. m.h.: 1 pair/106 acres.				B																						2	1				
					F																							1	2			
					Rs																						2	1				
northern flicker	r.c.: 3-14/clutch. h.r., t.s.: 40 acres coniferous forest.				B																							2	1			
					F																	2	2	1					1	1		
					Rs																		2	1					1			
pileated woodpecker	r.c.: 3-8/clutch, avg. 4. h.r.: 300-600 acres up to a 4 mile radius. t.s.: 320-600 acres.				B																							1				
					F																							1	1			
					Rs																							1				
olive-sided flycatcher	r.c.: 3-4/clutch.				B																							2	2			
					F																		2	2								
					Rs																		2	2				2				
western wood-pewee	r.c.: 2-4/clutch. t.s.: 3-4 acres. density: 1-10 birds/100 acres (breeding).				B					2	2	2		2	2												1	1		2		
					F					2	2	2		2	2								1	1			2					
					Rs					2	2	2		2	2								1	1			2					
willow flycatcher	r.c.: 2-5/clutch. t.s.: up to 3 acres. density: 56 birds/100 acres (spring);(breeding) 3-40 pairs/100 acres.				B					1	1	1		1	1	2	1	1								1	1		1			
					F					1	1	1		1	1	1	1	1				1	1	1			1					
					Rs					1	1	1		1	1	2	1	1					1	1			1					
Hammond's flycatcher	r.c.: 2-5/clutch. t.s.: up to 3.8 acres. density: 5.6-18.8 males/100 acres.				B																						1	1		2		
					F																		1	1								
					Rs																		1	1			2	2				
dusky flycatcher	r.c.: 2-6/clutch. t.s.: 3-6 acres. density: 4-8 pairs/100 acres.				B																						1	1	2			
					F																		1	1	2							
					Rs																		1	1	2			2				
western flycatcher	r.c.: 3-9/clutch. density: 5-28 birds/100 acres.				B					2	2																		2			
					F					2	2																					
					Rs					2	2																	2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
					Dry hill-sides			Mtn. shrubland and chaparral			Deciduous hardwood			Red alder forest			Evergreen hardwood			Conifer-hardwood forest			Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
					1	Grass-forb	1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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white-headed woodpecker	PIAL	13	12	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↓	Habitat use ↓	Plant communities and stand conditions ↓																															
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland					
																												Herbaceous wetland		Hardwood and shrubby wetland			
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
BIRDS																																	
white-headed woodpecker	B										2	2	2																				
	F										2	2	2																				
	Rs										2	2	2																				
three-toed woodpecker	B										2	2	2			2	1	1			1								2	2	2		
	F								2	2	2	2			2	2	1	1		2	1							2	2	2	2		
	Rs										2	2	2			2	1	1			1								2	2	2		
black-backed woodpecker	B										2	2	2			2	2	1			1								2	2	2		
	F								2	2	2	2			2	2	1	1		2	1							2	2	2	2		
	Rs										2	2	2			2	2	1			1								2	2	2		
northern flicker	B					1	1					1	1					1	1										1	1			
	F	1	2	2		2	2	1	2	2		2	2	1	2	2	2	2	2	2	2	2	1	2	2		1	2	2	2	2		
	Rs			2		1	1			2		1	1			2		1	1		2			2				2		1	1		
pileated woodpecker	B					2	1					2	1								2									2	2		
	F	2		2	2	2	1	2		2	2	2	1					2	2		2			2				2	2	2	2		
	Rs					2	1					2	1								2								2	2			
olive-sided woodpecker	B					1	1					1	1					2	2			2		2						2	1		
	F			2		1	1			2		1	1			2		2	2		2			2				2		1	1		
	Rs			2		1	1			2		1	1			2		2	2		2	2		2	2			2		2	1		
western wood-peewee	B				2	1	1				2	2	2								2								2	1	1		
	F		2	1	2	1	1		2	2	2	2	2				2	1	2						2	1	2	1	1	1	1		
	Rs				2	1	1				2	2	2						2										2	1	1		
willow flycatcher	B																											2	2	2	2		
	F																								2	1	1	1	2	2	2		
	Rs																									1	1	2	2	2	2		
Hammond's flycatcher	B			2	2	1	1			2	2	1	1				2	1			2	1							2	2	1	1	
	F			2	2	1	1			2	2	1	1				2	1			2	1						1	1	2	2	1	1
	Rs			2	2	1	1			2	2	1	1				2	1			2	1							2	2	1	1	
dusky flycatcher	B							1	1												1	1											
	F							2	1	1											2	1	1										
	Rs							1	1												1	1											
western flycatcher	B				2	1					2	2																	2	1	1		
	F				2	1					2	2																2	1	1			
	Rs				2	1					2	2																2	1	1			

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
					BIRDS												
black phoebe	SANI	7	12	B												Summer resident; W. OR., primarily S.W. OR.; rare.	
				F													
				Rs													
Say's phoebe	SAYSA	14	9	B												Winter and spring visitor; W. WA. and W. OR.	
				F													
				Rs													
ash-throated flycatcher	MYCI	14	18	B												Summer resident; S.W. OR.; very rare in remainder of W. WA. and W. OR.	
				F													
				Rs													
western kingbird	TYVE	11	15	B												Rare breeder; W. WA.; sporadic breeder in northern Oregon; regular breeder south of Eugene, OR.; summer resident; W. WA. and W. OR.	
				F													
				Rs													
eastern kingbird	TYTY	7	20	B												Summer resident; W. WA. and W. OR.; rare; lower elevations.	
				F													
				Rs													
horned lark	ERAL	5	7	B												Summer, winter, migrant, and permanent populations; W. WA. and W. OR.; open grasslands and alpine meadows.	
				F													
				Rs													
purple martin	PRSU	14	24	B												Summer resident; W. WA. and W. OR.	
				F													
				Rs													
tree swallow	TABI	14	29	B												Migrant and summer resident, W. WA. and W. OR.	
				F													
				Rs													
violet-green swallow	TATH	14	33	B												Summer resident; W. WA. and W. OR.	
				F													
				Rs													
northern rough-winged swallow	STSE	16	9	B												Migrant and summer resident; W. WA. and W. OR.; nests in earth banks.	
				F													
				Rs													
bank swallow	RIRI	16	9	B												Migrant and summer resident; W. WA. and W. OR.; uncommon. Nesting colonies require specialized soil conditions.	
				F													
				Rs													

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{2/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal			Riparian					Wetlands			Edges					Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
black phoebe	r.c.: 3-7/clutch, 2 broods/year.				B																									1			
					F				1	1	1	1			1	1	1	1	1		1				1	1	1						
					Rs																										1		
Say's phoebe					B																												
					F																	1	2								2		
					Rs																	1	2								2		
ash-throated flycatcher	r.c.: 3-7/clutch, avg. 4. t.s.: up to 25 acres.				B																	1					2	1					
					F			2	2	2	2	2						2		2		1	1		1	1	1						
					Rs																	2	1		2	2	2						
western kingbird	r.c.: 3-4/clutch. h.r., t.s.: 0.25 mile radius.				B						2											2	2	1									
					F						2										1	2	2										
					Rs						2										1	2	2						2				
eastern kingbird	r.c.: 3-5/clutch.				B					2	2			2	2		2	2	2	2	1	1	1		1	1							
					F					1	1			1	1		1	1	1	1	1	1	1										
					Rs					2	2			2	2		2	2	2	2	1	1	1		1	1	2						
horned lark	r.c.: 2-7/clutch. t.s.: up to 13 acres. density: 4-7 pairs/2.5 acres.				B																												
					F		2	1												2													
					Rs																2												
purple martin	r.c.: 3-8/clutch.				B																1	1			1	1							
					F		2	1	1	1	2	2		1	2	2	2	2	2		1	1				1							
					Rs																	1	1				1	1					
tree swallow	r.c.: 3-7/clutch. t.s.: 25 yard radius from nest. density: 15-30 pair/10 acres.				B																				1	1							
					F		2		2	2	2	1		1	1	2	1	2	2								1						
					Rs																						1	1					
violet-green swallow	r.c.: 4-7/clutch. density: 10-30 pair/100 acres (breeding).				B																					2	1	1					
					F		2		2	2		1		1	1	2	1	2	2								2						
					Rs																						2	1	1				
northern rough-winged swallow	r.c.: 3-9/clutch. t.s.: up to 5 yards between nests.				B																								1				
					F					1	1	2		1	1	2	1	2	2			2	1										
					Rs																									1			
bank swallow	r.c.: 3-8/clutch. t.s.: 6-8 inches between nests; colonial.				B				2																				1				
					F			2	2	1	2	2		1	2		2	2	2					2									
					Rs																				2						1		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Dry hillsides		Mtn. shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					1	Grass-forb		1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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black phoebe	SANI	7	12	B				2		2	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																															
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland					
																												Herbaceous wetland		Hardwood and shrubby wetland			
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
BIRDS																																	
black phoebe	B																																
	F																								1	1	1	1					
	Rs																										1	1					
Say's phoebe	B																																
	F	2	2																														
	Rs	2	2																														
ash-throated flycatcher	B																										2	2	2				
	F																								2	2	2	2	2				
	Rs																											2	2	2			
western kingbird	B																										2	2					
	F																								2	2	2	2					
	Rs																										2	2					
eastern kingbird	B		2	2																							1	1	2	2	2		
	F	2	2	2																					1	1	1	1	2	2			
	Rs		2	2																							1	1	2	2			
horned lark	B																																
	F																									2							
	Rs																										2						
purple martin	B					2	2																					2	1	1			
	F	2	2	2		2	2																		2	2	2	2	1	1			
	Rs					2	2																				2		1	1			
tree swallow	B					2	1					2	2															2	1				
	F	1	1	2	2	2	2	2	2	2	2	2													2	2	2	2	1	1			
	Rs					2	1					2	2															2	1				
violet-green swallow	B					2	2					2	2															1	1				
	F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1			
	Rs					2	2					2	2														2		1	1			
northern rough-winged swallow	B																									**	**	**	**				
	F																									1	1	1	2	2	2		
	Rs																									**	**	**	**				
bank swallow	B																									**	**	**	**				
	F																									1	1	2	2	2	2		
	Rs																									**	**	**	**				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

* * Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
cliff swallow	HIPY	4	12	B													Migrant and summer resident; W. WA. and W. OR.; use cliffs or manmade structures for nesting.
				F													
				Rs													
barn swallow	HIRU	4	17	B													Migrant and summer resident; W. WA. and W. OR.; only manmade structures used for nesting in the northwest.
				F													
				Rs													
gray jay	PECA	11	23	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
Steller's jay	CYST	11	32	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
scrub jay	APCO	7	24	B													Permanent resident; S.W. WA. and W. OR.; rare in W. WA.
				F													
				Rs													
Clark's nutcracker	NUCO	10	15	B													Permanent resident, crosses over crest of Cascades in W. WA. and W. OR.
				F													
				Rs													
black-billed magpie	PIPI	7	16	B													Fall, winter, and irregular all year visitor; S.W. OR.; rare winter visitor W. WA.
				F													
				Rs													
American crow	COBR	11	32	B													Permanent resident; W. WA. and W. OR.; northwestern crow is considered by some to be a separate species, but ecology and habitat use is the same as the American crow
				F													
				Rs													
common raven	CORCO	4	36	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
black-capped chickadee	PAAT	14	18	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
mountain chickadee	PAGA	14	20	B													Permanent resident; mountainous areas of W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; □ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species √	Specific data √				Habitat use √	Special and unique habitats √																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
cliff swallow	r.c.: 2-6/clutch, 2 broods/year. h.r.: up to 3.7 mile radius from nest. t.s.: 4 inches around nest.				B																									1			
					F				1	1	2	2		1	2	2	1	2		1				2	2								
					Rs																								1				
barn swallow	r.c.: 1-8/clutch, 2 broods/year. h.r.: up to 0.75 mile radius. t.s.: 3 yard radius. density: 16-30 pairs/mi² (breeding).				B																												
					F		2	1	1	1	1	1		2	1	2	1	1		1	2			1	1	2							
					Rs		2	2	2												2												
gray jay	r.c.: 2-5/clutch. h.r., t.s.: 160-320 acres/pair. density: up to 8 birds/100 acres.				B																												
					F																												
					Rs																												
Steller's jay	r.c.: 2-6/clutch. density: 19 pair/100 acres.				B																	2	2	2									
					F																1	1	2						2				
					Rs																2	2	2										
scrub jay	r.c.: 2-7/clutch. h.r.: 5-12 acres. t.s.: 5-7 acres. density: 1 pair/4-10 acres.				B																1	1	2										
					F																1	1	1										
					Rs																1	1	2										
Clark's nutcracker	r.c.: 2-6/clutch. h.r.: 0.5-1.5 mile radius. t.s.: 22 acres (breeding).				B																			2									
					F																2	2	2										
					Rs																			2									
black-billed magpie	r.c.: 5-13/clutch.				B																1	1	2										
					F					2	2			2		2		2		2	1	1	1		2				2	2			
					Rs																2	1	1										
American crow	r.c.: 2-8/clutch. h.r.: up to 37 miles/day. density: 2-10 birds/250 acres (winter).				B					1	1	2										2	2		2	1							
					F		1	1	1	2	2	2		2	2	2	2	2		2	2	2	2	2	2	2							
					Rs					1	1	2										2	2		1	1							
common raven	r.c.: 2-8/clutch. h.r.: 2.6-4.2 mi². density: 1 pair/6.5-18 mi².				B																	2	2						1				
					F	2	2	2													1	1	1						2	2			
					Rs																	1	1						1				
black-capped chickadee	r.c.: 4-10/clutch. h.r.: 22-56 acres. t.s.: 1-18 acres.				B					1	1	1		2	2	2	2	2			1				2	1							
					F					1	1	1		2	2	2	2	2			1			2	2								
					Rs					1	1	1		2	2	2	2	2			1			2	2								
mountain chickadee	r.c.: 5-12/clutch, possibly produces 2 broods. h.r.: 0.8 mile/diameter. t.s.: 3-21 acres.				B																1					1	2						
					F																1												
					Rs																	1							2				

B Breeding; F Feeding; Rs Resting; 1 - Primary habitat; 2 - Secondary habitat.





Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																														
					Dry hillsides		Mtn shrubland and chaparral				Deciduous hardwood				Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)								
					Grass-forb	Grass-forb	Shrub	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth
					1	1	2	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
					1	1	2	1	2	3	4	5	6	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
BIRDS																																			
cliff swallow	HIPY	4	12	B																															
				F	1	1		1					1										2						2						
				Rs	2	2		2					2										2						2						
barn swallow	HIRU	4	17	B																															
				F	1	1	2	1	2				1	2			2	2					2	2				2	2						
				Rs	2	2	2	2	2				2	2			2	2					2	2				2	2						
gray jay	PECA	11	23	B																					2	2			2	1	1				
				F																			2	2	2	2	2				1	1	1		
				Rs																							2	2			2	1	1		
Steller's jay	CYST	11	32	B					2	2	2	2						2	2	2	2			2	2	1	1		2	2	1	1			
				F					2	2	2	2	2		2	2	2			2	2	2	2		2	1	1	1	1		2	1	1	1	
				Rs						2	2	2	2							2	2	2	2			2	2	1	1			2	2	1	1
scrub jay	APCO	7	24	B			1		1	1		2	2		2	2			1	1		2	2		2	2		2	2		2	2			
				F	2	2	1	2	1	1		2	2	2	2	2		2	1	1		2	2	2	2	2	2	2	2	2	2	2	2	2	
				Rs			1		1	1		2	2		2	2				1	1		2	2		2	2		2	2		2	2	2	
Clark's nutcracker	NUCO	10	15	B																															
				F																															
				Rs																															
black-billed magpie	PIPI	7	16	B															2	2									2	2					
				F	1	2	2													2	2	2							2	2	2				
				Rs			2														2	2								2	2				
American crow	COBR	11	32	B						2	2	1	1			2	1			2	2	2	2			2	2	2	2		2	2	2		
				F	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
				Rs			2		2	2	2	1	1		2	2	1		2	2	2	2	2		2	2	2	2	2		2	2	2	2	
common raven	CORCO	4	36	B							1	1				2						1	1				1	1			1	1			
				F	1	2	2	1	1	1	2	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1		
				Rs	2	2	2		2	2	2	1	1		2	2	2		2	2	2	1	1		2	2	2	1	1		2	2	1	1	
black-capped chickadee	PAAT	14	18	B							1	1	1				1									2	1	1				2	2		
				F					2	1	1	1	1		1	1	1								2	2	2	1	1		2	2	2	2	
				Rs							1	1	1				1										2	1	1				2	2	
mountain chickadee	PAGA	14	20	B																						2	2	2			2	1	1		
				F																					2	2	2	2	2		1	1	1	1	
				Rs																							2	2	2	2			2	2	1

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
chestnut-backed chickadee	PARU	14	28	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
plain titmouse	PAIN	14	20	B													Permanent resident; S.W. OR.
				F													
				Rs													
bushtit	PSMI	8	22	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
red-breasted nuthatch	SITCA	13	24	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
white-breasted nuthatch	SICAR	13	17	B													Permanent resident, south of Tacoma in W. WA. and W. OR.
				F													
				Rs													
pygmy nuthatch	SIPY	13	8	B													Permanent resident, S W. Oregon.
				F													
				Rs													
brown creeper	CEAM	14	29	B													Permanent resident; W. WA. and W. OR.; nests under loose bark.
				F													
				Rs													
rock wren	SAOB	4	12	B													Accidental in W. WA.; permanent resident of S.W. OR.; rare W. OR.; extirpated from San Juan Islands.
				F													
				Rs													
canyon wren	CATME	4	12	B													Permanent resident, S W. OR.
				F													
				Rs													
Bewick's wren	THBE	14	22	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
house wren	TRAE	14	18	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													

 B-Breeding;
  F-Feeding;
  Rs-Resting;
  See comments and Chapter 3 narrative.

Species √	Specific data √				Habitat use √	Special and unique habitats																													
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal			Riparian					Wetlands			Edges					Habitat features													
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caes				
BIRDS																																			
chestnut-backed chickadee	r.c.: 5-9/clutch. t.s.: 3.3 acres. density: 20-30 males/100 acres.				B																					1					1				
					F					2	2											1													
					Rs																	1													
plain titmouse	r.c.: 3-9/clutch. h.r., t.s.: 3.2-12.6 acres.				B																									1					
					F																														
					Rs																														
bushtit	r.c.: 4-15/clutch. h.r.: 20-90 acres, avg. 44 t.s.: 5.5 yard radius to 3.5 acres.				B																					1									
					F																	1													
					Rs																	1													
red-breasted nuthatch	r.c.: 4-7/clutch. density: 13-45 breeding birds/100 acres.				B																									1	2				
					F																									2	1				
					Rs																								1	2					
white-breasted nuthatch	r.c.: 5-10/clutch, avg. 8. h.r.: 25-37 acres. t.s.: 25 acres (winter), 1.7-2.2 acres (feeding).				B																								1	2					
					F																								2	2					
					Rs																								1	2					
pygmy nuthatch	r.c.: 4-10/clutch. t.s.: 2.0-3.7 acres. density: 4-26 pair/100 acres.				B																								1	2					
					F																								2	2					
					Rs																								1	2					
brown creeper	r.c.: 3-9/clutch. density: 2-24 birds/100 acres.				B																								1						
					F																								2						
					Rs																								1						
rock wren	r.c.: 3-10/clutch, 2-3 broods/yr. h.r.: up to 164 foot radius from nest. density: up to 25 males/100 acres.				B																										1	1			
					F																									1	1				
					Rs																									1	1				
canyon wren	r.c.: 3-10/clutch, 2 broods/year.				B																										1	1			
					F																									1	1				
					Rs																									1	1				
Bewick's wren	r.c.: 3-11/clutch, avg. 6. h.r., t.s.: 3.2-12.0 acres. density: 10-67 males/100 acres.				B					2	2						2				2	1					2	1							
					F					2	2						2				2	1							1						
					Rs					2	2						2				2	1						2	1						
house wren	r.c.: 3-12/clutch. t.s.: up to 4.5 acres. density: 5-45 birds/100 acres.				B																2	1					1	1							
					F																2	1						2	2						
					Rs																	2	1						1	1					

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																															
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood				Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)											
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	
BIRDS																																				
chestnut-backed chickadee	PARU	14	28	B							2	2	2				2				2	2	2	2	2				2	1	1			2	1	1
				F					2	2	2	2			2	2		2	2	2	2	2		2	1	1	1	1		2	1	1	1	1		
				Rs						2	2	2				2				2	2	2				2	1	1				2	1	1		
plain titmouse	PAIN	14	20	B						2	1	1																	2	2	2			2	2	2
				F				2	1	1	1	1												2	2	2	2	2		2	2	2	2	2		
				Rs					2	2	1	1													2	2	2	2			2	2	2	2		
bushtit	PSMI	8	22	B			1		1	1	2	2	2		1	1	2		1	1	2	2	2		2	2	2						2	2	2	2
				F			1		1	1	2	2	2		1	1	2		1	1	2	2	2		2	2	2						2	2	2	2
				Rs			1		1	1	2	2	2		1	1	2		1	1	2	2	2		2	2	2						2	2	2	2
red-breasted nuthatch	SITCA	13	24	B																									2	1	1			2	1	1
				F							2	2			2	2			2	2	2	2			2	2	1	1			2	2	1	1		
				Rs																						2	1	1				2	1	1		
white-breasted nuthatch	SICAR	13	17	B						2	1	1																2	1	1			2	1	1	
				F			2		2	2	2	1	1											2	2	2	1	1		2	2	2	1	1		
				Rs			2		2	2	1	1												2	2	1	1			2	2	1	1			
pygmy nuthatch	SIPY	13	8	B																													2	1	1	
				F																													2	1	1	
				Rs																													2	1	1	
brown creeper	CEAM	14	29	B						2	2	2				2				2	2	2				2	1	1				2	1	1		
				F						2	2	2				2				2	2	2				2	1	1				2	1	1		
				Rs					2	2	2				2					2	2	2				2	1	1				2	1	1		
rock wren	SAOB	4	12	B	2	2	2	2	2									2	2																	
				F	1	2	2	2	2											2	2															
				Rs	2	2	2	2	2											2	2															
canyon wren	CATME	4	12	B	2	2	2	2	2									2	2																	
				F	1	1	2	1	2											1	2															
				Rs	2	2	2	2	2											2	2															
Bewick's wren	THBE	14	22	B			1		1	2		2	1		1	1			2	2		2	2		2	2		2	2			2	2			
				F			1		1	2		2	2		1	1				2	2		2	2		2	2				2	2				
				Rs			1		1	2		2	1		1	1				2	2		2	2		2	2				2	2				
house wren	TRAЕ	14	18	B			1		2	1		2	2		2																2	1		2	2	
				F			1		1	1		2	2		2	2																1	1		2	2
				Rs			1		2	1		2	2		2																2	1		2	2	

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat

Species ↓	Habitat use ↓	Plant communities and stand conditions ^{s/}																																						
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland												
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland						
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth							
chestnut-backed chickadee	B				2	1	1				2	1	1														2					2	2	2				2	1	1
	F			1	1	1	1			1	1	1	1													2	2	2			2	2	2	2	2	2	2	1	1	1
	Rs				2	1	1				2	1	1															2					2	2	2			2	1	1
plain titmouse	B																																							
	F																																							
	Rs																																							
bushtit	B																																							
	F																																							
	Rs																																							
red-breasted nuthatch	B				2	1	1				2	1	1				2	1	1								1											1	1	
	F				2	2	1	1			2	2	1	1			2	2	1	1						2	1								2	2	1	1		
	Rs				2	1	1				2	1	1				2	1	1							1											1	1		
white-breasted nuthatch	B																																							
	F																																							
	Rs																																							
pygmy nuthatch	B																																							
	F																																							
	Rs																																							
brown creeper	B				2	1	1				2	1	1				2	2	2							2									2	2	2			
	F				2	1	1				2	1	1				2	2	2							2								2	2	2				
	Rs				2	1	1				2	1	1				2	2	2							2								2	2	2				
rock wren	B																																							
	F																																							
	Rs																																							
canyon wren	B																																							
	F																																							
	Rs																																							
Bewick's wren	B																																							
	F																																							
	Rs																																							
house wren	B																																							
	F																																							
	Rs																																							

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
winter wren	TRTR	14	27	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
marsh wren	CIPA	3	8	B													Restricted to marsh habitat or wetlands with emergent vegetation; permanent resident; W. WA. and W. OR.
				F													
				Rs													
American dipper	CIME	3	★	B													Permanent resident; W. WA. and W. OR.; found along mountain streams.
				F													
				Rs													
golden-crowned kinglet	RESA	10	27	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
ruby-crowned kinglet	RECA	10	26	B													Winter resident Sept-May, W. WA. and permanent resident W. OR.
				F													
				Rs													
blue-gray gnatcatcher	POCA	11	23	B													Accidental W. WA. and W. OR.; summer resident; S.W. OR.
				F													
				Rs													
western bluebird	SIME	14	20	B													Permanent resident; W. WA. and W. OR.; population decreasing because of loss of nesting habitat.
				F													
				Rs													
mountain bluebird	SICU	14	16	B													Permanent resident, higher elevations; W. WA. and W. OR.
				F													
				Rs													
Townsend's solitaire	MYTO	6	25	B													Permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
Swainson's thrush	CAUS	7	26	B													Summer resident; W. WA. and W. OR.; prefers heavily forested areas.
				F													
				Rs													
hermit thrush	CAGU	7	30	B													Permanent, winter, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{4/}	Special and unique habitats ^{3/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands			Edges					Habitat features									
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Scrub	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
winter wren	r.c.: 4-7/clutch. h.r., t.s.: up to 3 acres. m.h.: 5-24 pair/100 acres.				B					2	2												1					2	1				
					F					2	2										1							1					
					Rs					2	2										1							1					
marsh wren	r.c.: 3-10/clutch, avg. 5, 2-3 broods/year. t.s.: up to 0.9 acres.				B		2				2		2	2			1	1		2	1				1	1							
					F		2				2		2	2			1	1		2	1			1	1								
					Rs		2				2		2	2			1	1		2	1			1	1								
American dipper	r.c.: 2-6/clutch, 1-2 broods/year. h.r.: 300-400 yards stream (brooding). t.s.: 350-2220 yards.				B				1	1	1													1	1	1				2			
					F				1	1	1												1	1	1								
					Rs				1	1	1													1	1	1				2			
golden-crowned kinglet	r.c.: 5-11/clutch, 2 broods/year. density: 40-80 males/100 acres (conifers).				B																												
					F																												
					Rs																												
ruby-crowned kinglet	r.c.: 5-11/clutch. t.s.: 0.6-0.9 acres (winter). density: 40-46 birds/100 acres (nesting).				B																												
					F																1												
					Rs																												
blue-gray gnatcatcher	r.c.: 3-6/clutch h.r., t.s.: up to 7.5 acres (breeding), 22 acres (winter).				B																		1										
					F																		1										
					Rs																		1										
western bluebird	r.c.: 3-8/clutch, avg. 5. density: 15 pair/100 acres.				B																			1	1			1					
					F																	2	1	1									
					Rs																		1	1				2					
mountain bluebird	r.c.: 4-8/clutch, 2 broods/year. h.r.: 6.5 acres (nesting). t.s.: 4.5-16.8 acres, avg. 10.6 acres.				B																			1	1			1					
					F																	1	1	1									
					Rs																		1	1				2					
Townsend's solitaire	r.c.: 3-5/clutch. t.s.: up to 13 acres. density: 2.5-3.3 pair/100 acres.				B																		1	1	2				1	1	2		
					F																		1	1	2				2		2		
					Rs																		1	1	2				1	1	2		
Swainson's thrush	r.c.: 3-5 clutch, 1-2 broods/year. density: 13-70 pair/100 acres.				B					2	2	2						2						1	2								
					F					2	2	2						2					1	2									
					Rs					2	2	2						2					1	2									
hermit thrush	r.c.: 3-6/clutch. t.s.: 1.5-2.5 acres. density: up to 13 pair/100 acres.				B																		1	1	2								
					F																	1	1	2									
					Rs																		1	1	2								

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																	
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood				Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)													
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth			
BIRDS																																						
winter wren	TRTR	14	27	B								2			2					2	2							2	1	1			2	1	1			
				F							2			2	2			2	2	2	2			2	2	1	1			2	2	1	1					
				Rs							2			2	2			2	2	2	2			2	2	1	1			2	2	1	1					
marsh wren	CIPA	3	8	B																																		
				F																																		
				Rs																																		
American dipper	CIME	3	★	B					★ ★				★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★				
				F					★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★					
				Rs					★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★			★ ★					
golden-crowned kinglet	RESA	10	27	B																								2	2	2				1	1	1		
				F					2	2	1	1	1			2	2	1									2	2	1	1	1			2	2	1	1	1
				Rs					2	1	1	1	1			2	2	1										2	2	2				1	1	1		
ruby-crowned kinglet	RECA	10	26	B																								2	2	2				2	2	2		
				F					1	1	2	1	1			2	2	2								2	2	2	2	2			1	1	2	2	2	
				Rs					1	2	1	1	1			2	2	2								2	2	2	2			1	2	2	2	2		
blue-gray gnatcatcher	POCA	11	23	B			1		1	1	2	1	1					2	2	2	2	2			2	2	2	2	2									
				F	2	2	1	2	1	1	2	1	1						2	2	2	2	2	2			2	2	2	2	2	2	2	2	2	2	2	
				Rs			1		1	1	2	1	1						2	2	2	2	2			2	2	2	2	2								
western bluebird	SIME	14	20	B				1	1	2																1	1	2				1	1	2				
				F	1	1	1	1	1	1	2	2	2													1	1	1	2	2	2		1	1	1	2	2	2
				Rs				1	1	2																1	1	2				1	1	2				
mountain bluebird	SICU	14	16	B																																		
				F	1	1	1	2	2	2																						1	1	1				
				Rs				2	2																							1	1					
Townsend's solitaire	MYTO	6	25	B																						2	1	1		1	1	2	1	1		1	1	
				F				2	2	2		2	2						2	2	2		2	2			2	1	1		1	1	2	1	1		1	1
				Rs				2	2	2		2	2						2	2	2		2	2			2	1	1		1	1	2	1	1		1	1
Swainson's thrush	CAUS	7	26	B					2	2	2	2	2			1	1	1								2	2	2	2	2		2	2	2	2	2	2	
				F					2	2	2	2	2			1	1	1								2	2	2	2	2		2	2	2	2	2	2	
				Rs					2	2	2	2	2			1	1	1								2	2	2	2	2		2	2	2	2	2	2	
hermit thrush	CAGU	7	30	B																						1	1	2	1	1		1	1	2	1	1		
				F			2		2	2	2	2	2			2	2	2			2	2	2			2	2	2	2	2		1	1	2	1	1		
				Rs					2	2	2	2	2			2	2	2			2	2	2			2	2	2	2	2		1	1	2	1	1		

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																																						
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland												
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland						
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub											3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber
BIRDS																																								
winter wren	B				2	1	1				2	1	1														2						2	1	1					
	F			2	2	1	1			2	2	1	1														2	2				2	2	1	1					
	Rs			2	2	1	1			2	2	1	1														2	2				2	2	1	1					
marsh wren	B																											1	2				2							
	F																											1	2				2							
	Rs																											1	2				2							
American dipper	B			**					**					**													**		**					**						
	F			**					**					**													**		**					**						
	Rs			**					**					**													**		**					**						
golden-crowned kinglet	B				1	1	1				1	1	1				1	1	1				1				1							1	1	1				
	F		2	2	1	1	1		2	2	1	1	1		2	2	1	1	1		2	2	1		2	2	1			2	2	1	1	1						
	Rs				1	1	1				1	1	1					1	1	1				1			1							1	1	1				
ruby-crowned kinglet	B				2	1	1				2	1	1				2	2	2				2											2	1	1				
	F		1	1	2	1	1		1	1	2	1	1		2	2	2	2	2		2	2	2		1	1	2			1	1	2	1	1		1	1	2	1	1
	Rs		1	1	2	1	1		1	1	2	1	1		2	2	2	2	2		2	2	2		1	1	2			1	1	2	1	1		1	1	2	1	1
blue-gray gnatcatcher	B																														2	2	2	2	2					
	F																													2	2	2	2	2	2					
	Rs																														2	2	2	2	2					
western bluebird	B																														2	2								
	F																									2	2			1	1	1		2	2					
	Rs																														2	2								
mountain bluebird	B							2	2					1	1																									
	F							2	2	2		2	2	1	1	1		2	2	1	1	2																		
	Rs							2	2	2				1	1	1																								
Townsend's solitaire	B	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2	2	2																		
	F	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2	2	2		2	2															
	Rs	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2	2	2		2	2															
Swainson's thrush	B		2	1	1	1	1		2	2	2	2	2																		2	1	1	1	1		2	1	1	1
	F		1	1	1	1	1		2	2	2	2	2																		1	1	1	1	1		1	1	1	1
	Rs		1	1	1	1	1		2	2	2	2	2																		1	1	1	1	1		1	1	1	1
hermit thrush	B		1	1	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2											1	1	2	1	1		
	F		1	1	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2		1	1	2			1	1	2	1	1		1	1	2	1	1
	Rs		1	1	2	1	1		1	1	2	1	1		1	1	2	1	1		1	1	2		1	1	2			1	1	2	1	1		1	1	2	1	1

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
American robin	TUMI	11	37	B													Permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
varied thrush	IXNA	11	28	B													Permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
wrentit	CHFA	8	10	B													Permanent resident; W. OR. , primarily along coast.
				F													
				Rs													
water pipit	ANSP	5	7	B													Permanent, winter, summer, and migrant populations; W. WA. and W. OR.; fields and alpine areas; nests above timberline.
				F													
				Rs													
Bohemian waxwing	BOGA	10	17	B													Winter resident; W. WA. and W. OR.; unpredictable occurrence.
				F													
				Rs													
cedar waxwing	BOCE	9	27	B													Permanent, summer, and migratory populations; W. WA. and W. OR.
				F													
				Rs													
northern shrike	LAEX	11	14	B													Winter resident; W. WA. and W. OR.
				F													
				Rs													
loggerhead shrike	LALU	7	19	B													Permanent and winter populations; W. WA. and W. OR.; rare.
				F													
				Rs													
European starling	STVU	14	27	B													Permanent resident, W. WA. and W. OR., introduced
				F													
				Rs													
solitary vireo	VISO	11	28	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
Hutton's vireo	VIHU	11	28	B													Permanent resident; W. WA. and W. OR.; primarily at lower elevations.
				F													
				Rs													

■ B-Breeding, ■ F-Feeding, ■ Rs-Resting, ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal			Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
BIRDS																																
American robin	r.c.: 3-7/clutch, avg. 4, 2 broods/year. h.r.: 0.25 mile radius of nest. t.s.: 0.1-0.6 acres. density: up to 26 pair/100 acres.	B																			1	1	1									
		F																	1	1	1	1										
		Rs																				1	1	1								
varied thrush	r.c.: 2-5/clutch. density: 2 males/100 acres (old growth); 4 males/100 acres (unthinned tall trees).	B																2				1	2									
		F					2	2										2				1	2									
		Rs					2	2										2				1	2									
wrentit	r.c.: 3-5/clutch. h.r.: up to 2.7 acres, avg. 0.75. t.s.: up to 3 acres, avg. 1.25.	B																				1										
		F																				1										
		Rs																				1										
water pipit	r.c.: 3-7/clutch. t.s.: 1.4 acres (Canada), 0.4-0.8 acres (Wyoming).	B																						1								
		F			1	1		1	1		1	1		1	1		1						1									
		Rs			1	1		1	1		1	1		1	1		1					1										
Bohemian waxwing		B																														
		F																				1										
		Rs																				1										
cedar waxwing	r.c.: 3-6/clutch, 1-2 broods/year. t.s.: 0.1 acre.	B																														
		F					2		2		2	2	2																			
		Rs					2		2		2	2	2																			
northern shrike		B																														
		F														2				1	1	1		1								
		Rs														2				1	1	1		1								
loggerhead shrike	r.c.: 4-8/clutch, 2 broods/year. h.r., t.s.: 11-40 acres, avg. 19 acres. density: 5 pair/100 acres.	B																			1	1										
		F																	1	1	1	1							2			
		Rs																			1	1	1									
European starling	r.c.: 3-6/clutch, 2-3 broods/year. h.r.: up to 50 mile radius (winter), 0.75 mile radius nest (breeding).	B		2			2	2	2		2	2	2								1	1	1				1	2				
		F		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			1	1	1									
		Rs		2			2	2	2		2	2	2								1	1	1				2	2				
solitary vireo	r.c.: 3-5/clutch. t.s.: 4.2 acres. density: 4-40 pair/100 acres.	B																														
		F																														
		Rs																														
Hutton's vireo	r.c.: 2-5/clutch, avg. 4. density: up to 55 pair/100 acres.	B																				1										
		F																				1										
		Rs																				1										

B-Breeding, F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																																									
					Dry hillides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer- hardwood forest						Mixed coniferous forest (SW Oregon)															
					1	Grass-forb	1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth
					1	Grass-forb	1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth
BIRDS																																														
American robin	TUMI	11	37	B			2		2	1	2	2	2		1	1	2		2	1	2	2	2		2	1	2	2	2		2	1	2	2	2		2	1	2	2	2					
				F			1	1	1	1		2	2	1	1	1		1	1	1		1	1	1		2	2	1	1	1		1	1	1		2	2		2	2						
				Rs			2		2	1	2	2	2		1	1	2		2	1	2	2	2		2	1	2	2	2		2	1	2	2	2		2	1	2	2	2					
varied thrush	IXNA	11	28	B													2																													
				F			2		2	2	2	2	2		2	2	2		2	2	2		2	2	1	1	1		2	2	2	1	1		2	2	2	1	1							
				Rs							2	2	2				2				2	2	2				2	1	1				2	1	1		2	1	1							
wrentit	CHFA	8	10	B			1		1	2																																				
				F			1		1	2																																				
				Rs			1		1	2																																				
water pipit	ANSP	5	7	B																																										
				F																																										
				Rs																																										
Bohemian waxwing	BOGA	10	17	B																																										
				F					2	2	2	2			2	2	2		2	2	2	2			2	2	2	2			2	2	2	2		2	2	2	2							
				Rs					2	2	2	2			2	2	2		2	2	2	2			2	2	2	2			2	2	2	2		2	2	2	2							
cedar waxwing	BOCE	9	27	B					2	2	2	2	2		1	1	1		2	2	2	2	2		2	2	2	2	2		2	2	2	2	2		2	2	2	2						
				F			2		2	2	2	2	2		1	1			2	2		2	2		2	2		2	2		2	2		2	2		2	2	2							
				Rs			2		2	2	2	2	2		1	1	1		2	2	2	2	2		2	2	2	2	2		2	2	2	2	2		2	2	2	2						
northern shrike	LAEX	11	14	B																																										
				F	2	2	2	2	2					2	2			2	2					2	2					2	2															
				Rs			2		2					2				2						2						2																
loggerhead shrike	LALU	7	19	B			1		1	1	2	2	2																																	
				F	1	1	1	1	1	2				2	2	2																														
				Rs			1		1	1	2	2	2																																	
European starling	STVU	14	27	B						2	1	1				2	1						2	2					2	2							2	2								
				F	1	2	2	1	2					1	2			1	2					1	2					1	2															
				Rs			2				2	1	1			2	1							2	2					2	2						2	2								
solitary vireo	VISO	11	28	B						1	2	2	2			2	2									1	2	2	2				1	2	2	2										
				F						1	2	2	2			2	2									1	1	2	2				1	2	2	2										
				Rs						1	2	2	2			2	2										1	2	2	2				1	2	2	2									
Hutton's vireo	VIHU	11	28	B			2		1	1	2	2	2			2	2	2			1	1	2	2	2			2	2	2	2	2			2	2	2	2								
				F			2		1	1	2	2	2			2	2	2			1	1	2	2	2			2	2	2	2	2			2	2	2	2								
				Rs			2		1	1	2	2	2			2	2	2			1	1	2	2	2			2	2	2	2	2			2	2	2	2								

B-Breeding, F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
warbling vireo	VIGI	11	26	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
red-eyed vireo	VIOL	11	14	B													Summer resident; W. WA. and W. OR.; primarily Puget Sound area and along Columbia River; rare.
				F													
				Rs													
orange-crowned warbler	VECE	6	31	B													Summer, migrant, and winter populations; W. WA. and W. OR.
				F													
				Rs													
Nashville warbler	VERU	6	30	B													Breeds W. OR.; summer resident; W. WA. and W. OR.
				F													
				Rs													
yellow warbler	DEPE	8	19	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
yellow-rumped warbler	DENCO	10	31	B													Permanent, winter, and migrant populations, W. WA. and W. OR.
				F													
				Rs													
black-throated gray warbler	DENI	10	28	B													Summer and migrant populations; W. WA. and W. OR.; primarily lower valleys.
				F													
				Rs													
Townsend's warbler	DETO	10	22	B													Permanent, summer, migrant populations; W. WA. and W. OR.; uncommon during the winter.
				F													
				Rs													
hermit warbler	DEOC	10	25	B													Summer and migrant populations, W. WA. and W. OR.
				Rs													
MacGillivray's warbler	OPTO	8	27	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
common yellowthroat	GETR	3	8	B													Summer and migrant populations; W. WA. and W. OR.; primarily around swamps and marshes at lower elevations.
				F													
				Rs													
■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.																	

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features												
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
warbling vireo	r.c.: 3-5/clutch. h.r.: 120 foot radius from nest. density: up to 42 pair/100 acres.				B																		1										
					F																				1								
					Rs																					1							
red-eyed vireo	r.c.: 3-5/clutch. t.s.: 1.25-1.75 acres. density: up to 40 pair/100 acres.				B					2	2			2	2																		
					F					2	2			2	2																		
					Rs					2	2			2	2																		
orange-crowned warbler	r.c.: 3-6/clutch. h.r., t.s.: 5 acres. density: 16-42 males/100 acres.				B																		1										
					F																				1								
					Rs																				1								
Nashville warbler	r.c.: 3-5/clutch, 2 broods/year. t.s.: 0.5 acre.				B																		1										
					F																				2	1							
					Rs																					1							
yellow warbler	r.c.: 3-6/clutch. h.r.: 0.4-0.5 acre up to 535 yards radius. t.s.: up to 1 acre.				B					2	2	2		2	2		2						1			1	1						
					F					2	2	2		2	2		2							1			1	1					
					Rs					2	2	2		2	2		2								1			1	1				
yellow-rumped warbler	r.c.: 3-5/clutch, 2 broods/year. density: 4.8-40.4 birds/100 acres.				B					2	2	2		2	2								1	2									
					F					2	2	2		2	2		2							2	1	2							
					Rs					2	2	2		2	2		2								1	2							
black-throated gray warbler	r.c.: 3-5/clutch. density: 4-15 birds/100 acres.				B																		1										
					F																				1								
					Rs																					1							
Townsend's warbler	r.c.: 3-5/clutch.				B																												
					F																												
					Rs																												
hermit warbler	r.c.: 3-5/clutch. density: up to 143 birds/100 acres.				B																												
					F																												
					Rs																												
MacGillivray's warbler	r.c.: 3-6/clutch, avg. 4. density: up to 85 birds/100 acres.				B					2													1			1							
					F					2															1			1					
					Rs					2															1			1					
common yellowthroat	r.c.: 2-6/clutch, avg. 4, 1-2 broods/year. h.r.: 0.15-0.75 acres. t.s.: 0.5-4.0 acres. density: 40-70 pair/100 acres.				B					2	2			2		2	1		2	2					1								
					F					2	2			2	2		2	1		2	2					1							
					Rs					2	2			2	2		2	1		2	2						1						

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					Dry hillside						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood				Conifer-hardwood forest				Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					1 Grass-forb		1 Grass-forb		2 Shrub		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↓	Habitat use ↓	Plant communities and stand conditions ^{a/}																																																																																																																																																																																																																																														
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																				
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland																																																																																																																																																																																																														
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																																																																																																																																																																																																									
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warbling vireo	B			2					2																																																																																																																																																																																																																																							
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	Rs			2					2																																																																																																																																																																																																																																							
red-eyed vireo	B																																																																																																																																																																																																																																															
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	Rs																																																																																																																																																																																																																																															
orange-crowned vireo	B		2	1			2		2	1			2												2	2																																																																																																																																																																																																																						
	F		1	1			2		1	1			2											2	2																																																																																																																																																																																																																							
	Rs		2	1			2		2	1			2											2	2																																																																																																																																																																																																																							
Nashville warbler	B		2	2		2	2		2	2		2	2										2	2	2		2	2																																																																																																																																																																																																																				
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	Rs		2	2		2	2		2	2		2	2										2	2	2		2	2																																																																																																																																																																																																																				
yellow warbler	B																																																																																																																																																																																																																																															
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	Rs																																																																																																																																																																																																																																															
yellow-rumped warbler	B		1	1	2				1	1	2												1	1	2		1	1	2																																																																																																																																																																																																																			
	F		1	1	1	1	1		1	1	1	1	1									1	1	1		1	1	1	1	1																																																																																																																																																																																																																		
	Rs		1	1	1	1	1		1	1	1	1	1									1	1	1		1	1	1	1	1																																																																																																																																																																																																																		
black-throated gray warbler	B			1	2	2	2																																																																																																																																																																																																																																									
	F		1	1	1	1	1																																																																																																																																																																																																																																									
	Rs		1	1	2	2	2																																																																																																																																																																																																																																									
Townsend's warbler	B				2	2					1	1					1	1																																																																																																																																																																																																																														
	F				2	1	1				2	1	1				2	1	1						2				2																																																																																																																																																																																																																			
	Rs				2	1	1				2	1	1				2	1	1						2				2																																																																																																																																																																																																																			
hermit warbler	B				1	1					1	1					2	2					2				2																																																																																																																																																																																																																					
	F				1	1	1				1	1	1				2	2	2					2	2			2	2																																																																																																																																																																																																																			
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MacGillivray's warbler	B		2	2		2			2	2		2																																																																																																																																																																																																																																				
	F		2	2		2			2	2		2					2	2					2	2			2	2																																																																																																																																																																																																																				
	Rs		2	2		2			2	2		2					2	2					2	2			2	2																																																																																																																																																																																																																				
common yellowthroat	B																																																																																																																																																																																																																																															
	F																																																																																																																																																																																																																																															

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
Wilson's warbler	WIPU	6	33	B													Summer and migrant populations; W. WA. and W. OR.; primarily lower elevations.
				F													
				Rs													
yellow-breasted chat	ICVI	8	8	B													Summer resident; W. WA. and W. OR.; interior valleys; rare.
				F													
				Rs													
western tanager	PILU	10	30	B													Summer resident; W. WA. and W. OR.
				F													
				Rs													
black-headed grosbeak	PHME	9	28	B													Summer resident; W. WA. and W. OR.; primarily lower interior valleys, uncommon along coast.
				F													
				Rs													
lazuli bunting	PAAMO	7	18	B													Summer resident; local in W. WA.; throughout W. Oregon interior valleys.
				F													
				Rs													
green-tailed towhee	PICH	7	16	B													Breeds in S.W. OR.; accidental winter resident W. WA.; occasional summer resident along Cascade summit; W. WA. and W. OR.
				F													
				Rs													
rufous-sided towhee	PIER	7	31	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
brown towhee	PIFU	7	16	B													Permanent resident; S.W. OR.
				F													
				Rs													
chipping sparrow	SPPA	11	36	B													Summer and migrant populations, W. WA. and W. OR.
				F													
				Rs													
vesper sparrow	POOGR	5	8	B													Local breeding populations; summer resident; W. WA. and W. OR.; primarily open prairie and agriculture lands.
				F													
				Rs													
lark sparrow	CHGR	5	12	B													Breeds; S.W. OR.; occasional summer visitor; W. WA. and N.W. OR.; permanent resident; S.W. OR.; lowland valleys.
				F													
				Rs													
■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.																	

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{1/}																														
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal			Riparian						Wetlands			Edges						Habitat features												
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves					
BIRDS																																				
Wilson's warbler	r.c.: 3-6/clutch, avg. 5. h.r.: 12-70 acres. t.s.: 0.5-3.25 acres. density: 0.17 birds/100 acres.	B																2					1			2										
			F																2					1			2									
			Rs																	2					1			2								
yellow-breasted chat	r.c.: 3-6/clutch, avg. 5. h.r.: 0.15-0.75 acre. t.s.: up to 4 acres.	B									2												1	2			1									
			F								2													1	1			1								
			Rs								2														1	1			1							
western tanager	r.c.: 3-5/clutch. density: 21-46 birds/100 acres.	B																						1	2											
			F																						1	2										
			Rs																							1	2									
black-headed grosbeak	r.c.: 2-5/clutch. density: up to 66 birds/100 acres.	B								2	2													1	1											
			F								2	2													1	1										
			Rs								2	2														1	1									
lazuli bunting	r.c.: 3-5/clutch. density: up to 50 birds/100 acres.	B																						1												
			F																						1											
			Rs																							1										
green-tailed towhee	r.c.: 2-5/clutch, 2 broods/year. t.s.: 0.2-0.4 acre. density: 3 pair/100 acres.	B																						1												
			F																						1								2			
			Rs																							1										
rufous-sided towhee	r.c.: 2-6/clutch, 2 broods/year. h.r.: 10-30 acres. t.s.: up to 7 acres. density: up to 54 pair/100 acres.	B																					1	1			2			1						
			F																					1	1			2			1					
			Rs																						1	1			2			1				
brown towhee	r.c.: 2-6/clutch, up to 3 broods/year. t.s.: 1-5 acres.	B																						1												
			F																						1											
			Rs																							1										
chipping sparrow	r.c.: 3-5/clutch, 2 broods/year. t.s.: up to 7.6 acres. density: 14-31 pair/100 acres.	B																						1	1	1										
			F																						1	1	1									
			Rs																							1	1	1								
vesper sparrow	r.c.: 3-6/clutch, 1-2 broods/year. t.s.: 1.5-2.75 acres. density: up to 50 pair/100 acres.	B																																		
			F																																	
			Rs																																	
lark sparrow	r.c.: 3-6/clutch, 1-2 broods/year. h.r.: 15 acres. t.s.: 3.5-8.6 acres. density: 5-30 pair/100 acres.	B																						1	2											
			F																						1	2	1									
			Rs																							1	2									

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Dry hillsides		Mtn. shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
					1	Grass-forb		1	Grass-forb	2	Shrub	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Wilson's warbler	WIPU	6	33	B											1	1	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ^{a/}																																							
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland													
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland							
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth		
BIRDS																																									
Wilson's warbler	B		2	2	2	2	2		2	2	2	2	2		2	2	2	2	2		2	2	2		2	2	2				1	1	2	1	1		1	1	2	2	2
	F		2	2	2	2	2		2	2	2	2	2		2	2	2	2	2		2	2	2		2	2	2				1	1	2	1	1		1	1	2	2	2
	Rs		2	2	2	2	2		2	2	2	2	2		2	2	2	2	2		2	2	2		2	2	2				1	1	2	1	1		1	1	2	2	2
yellow-breasted chat	B																														1	2									
	F																														1	2									
	Rs																														1	2									
western tanager	B					1	1					1	1					2	2				2				2							2	2					1	1
	F		1	2	2	1	1		1	2	2	1	1		1	2	2	2	2		2	2	2		2	2	2			1	2	2	2	2		1	2	2	1	1	
	Rs					1	1					1	1					2	2				2				2						2	2					1	1	
black-headed grosbeak	B		2	2	2	2	2																								1	1	1	1	1		2	2	2	2	2
	F		2	2	2	2	2																		1	1	2			1	1	1	1	1		2	2	2	2	2	
	Rs		2	2	2	2	2																								1	1	1	1	1		2	2	2	2	2
lazuli bunting	B																														1	1									
	F																														1	1									
	Rs																														1	1									
green-tailed towhee	B							2	2										2	2																					
	F							2	2	2									2	2	2																				
	Rs							2	2										2	2																					
rufous-sided towhee	B		1	1		2	2																		2	2					1	1		2	2		1	1		2	2
	F	2	1	1		2	2																2	2	2		2	2	2	2	1	1		2	2	2	1	1		2	2
	Rs		1	1		2	2																	2	2						1	1		2	2		1	1		2	2
brown towhee	B																														2	2									
	F																													2	2	2									
	Rs																														2	2									
chipping sparrow	B		1	1		2	2		2	2		2	2		2	2		2	2		2	2									1	1		2	2		1	1		2	2
	F	1	1	1		2	2	2	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1		2	2	2	1	1		2	2
	Rs		1	1		2	2		2	2		2	2		2	2		2	2		2	2			2	2					1	1		2	2		1	1		2	2
vesper sparrow	B																																								
	F																																								
	Rs																																								
lark sparrow	B																																								
	F																																								
	Rs																																								

Species √	Letter code √	Life form √	Versatility rating √	Habitat use √	Seasonal occurrence and activity												Comments √
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
savannah sparrow	PASA	5	15	B													Permanent, migrant, and summer populations; W. WA. and W. OR.; most abundant on coast.
				F													
				Rs													
grasshopper sparrow	AMSA	5	8	B													Summer resident; Willamette Valley, OR. and S.W. OR.; irregular.
				F													
				Rs													
fox sparrow	PAIL	7	34	B													Permanent, winter, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
song sparrow	MELME	7	24	B													Permanent and winter populations; W. WA. and W. OR.
				F													
				Rs													
Lincoln's sparrow	MELI	6	23	B													Summer and migrant populations, W. WA. and W. OR., permanent resident; S.W. OR.
				F													
				Rs													
golden-crowned sparrow	ZOAT	5	13	B													Winter and migrant populations; W. WA. and W. OR.
				F													
				Rs													
white-crowned sparrow	ZOLE	7	34	B													Permanent, winter, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
dark-eyed junco	JUHJ	5	39	B													Permanent, winter, summer, and migrant populations; W. WA. and W. OR.
				F													
				Rs													
red-winged blackbird	AGPH	7	11	B													Permanent resident, lower elevations; W. WA. and W. OR.
				F													
				Rs													
tricolored blackbird	AGTR	7	10	B													Permanent resident; S.W. OR.
				F													
				Rs													
western meadowlark	STUNE	5	16	B													Permanent resident; W. WA. and W. OR.; prairies and agricultural lands.
				F													
				Rs													
■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.																	

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands		Edges					Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
savannah sparrow	r.c.: 3-6/clutch, 1-2 broods/year. h.r.: 3.2 acres (winter). t.s.: 0.1-0.5 acre. density: 4-5 birds/acre (winter), 1-3.5 pair/acre (breeding).	B																			1	2											
		F			2	2									2		1	2															
		Rs			2	2									2		1	2															
grasshopper sparrow	r.c.: 2-6/clutch, 2 broods/year. t.s.: up to 3.2 acres. density: 5-30 birds/100 acres.	B																															
		F																															
		Rs																															
fox sparrow	r.c.: 3-5/clutch, 1-2 broods/year density: 5 males/100 acres.	B																				2	1	2									
		F																				2	1	2									
		Rs																				2	1	2									
song sparrow	r.c.: 2-6/clutch, 2-3 broods/year. h.r.: up to 9 acres. t.s.: 0.7 acre. density: 47-124 pair/100 acres.	B					2	2	2		2	2								2	1	2	2		2			2					
		F					2	2	2		2	2			1				2	1	2	2		2			2						
		Rs					2	2	2		2	2							2	1	2	2		2			2						
Lincoln's sparrow	r.c.: 3-6/clutch, 1-2 broods/year. t.s.: 1-5 acres. density: 20 males-65 birds/ 100 acres.	B							1						2		1	1					1	1									
		F							1						2		1	1					1	1									
		Rs							1						2		1	1					1	1									
golden-crowned sparrow		B																															
		F																			2	1	1										
		Rs																			2	1	1										
white-crowned sparrow	r.c.: 2-6/clutch, 2 broods/year. h.r.: 1-20 acres. t.s.: up to 2 acres.	B																		2	1	2											
		F																		2	1	2											
		Rs																		2	1	2											
dark-eyed junco	r.c.: 3-6/clutch, 2 broods/year. h.r.: up to 26 acres. t.s.: 2-3 acres. density: up to 54 pair/100 acres.	B																			1	1	1					2					
		F																			1	1	1					2					
		Rs																			1	1	1					2					
red-winged blackbird	r.c.: 2-6/clutch, avg. 4, 2 broods/year. h.r.: 50 mile radius (winter). t.s.: up to 1.1 acre. density: 100 males/100 acres.	B					2	2	1		1	1	2	1	1	2								1	1								
		F		2	2	1	2	2	1		1	1	2	1	1	1								1	1								
		Rs		2	2	1	2	2	1		1	1	2	1	1	1								1	1								
tricolored blackbird	r.c.: 2-6/clutch, avg. 4, 2 clutch/year. h.r.: 30-60 mi². t.s.: up to 11 ft².	B							1								1	1						1	2								
		F				1		2	1							1		1							1	2							
		Rs				1		2	1							1		1								1	2						
western meadowlark	r.c.: 3-7/clutch, avg. 5, 2 broods/year. h.r., t.s.: 3-32 acres. density: 10-25 birds/100 acres.	B																				2											
		F														2		2	1														
		Rs														2		2	1														

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					Dry hillsides		Mtn shrubland and chaparral	Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
					1	Grass-forb		1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth	1	Grass-forb	2	Shrub	3	Open sap-pole	4	Closed sap-pole	5	Large sawtimber	6	Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
BIRDS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
savannah sparrow	PASA	5	15	B	2	2		2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

B-Breeding, F-Feeding, Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}		Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																	
			Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland							
																													Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland	
1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	1	2	3	4	1	2	3	4	5	6					
Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth					
savannah sparrow	B																																			
	F											2																								
	Rs											2																								
grasshopper sparrow	B																																			
	F																																			
	Rs																																			
fox sparrow	B	2	2				2	2				1	1	2	2	2		1	1	2		2	2						1	1	2	2				
	F	2	2				2	2				2	1	1		2	2	2	1	1		1	2			2	1	1		2	2					
	Rs	2	2				2	2				1	1	2	2	2		1	1	2		1	2				1	1	2	2	2					
song sparrow	B	2	2																			1	1					1	1							
	F	2	2	2																		1	1	1			1	1	1							
	Rs	2	2																			1	1				1	1								
Lincoln's sparrow	B						2					2																1	2							
	F	2	2				2	2				2	2					2	2			2	2			1	1	1	2							
	Rs	2	2				2	2				2	2					2	2			2	2			1	1	1	2							
golden-crowned sparrow	B																																			
	F	2	2	2			2	2	2													2	1	2			2	2	1	2						
	Rs	2	2	2			2	2	2													2	1	2			2	2	1	2						
white-crowned sparrow	B	1	1	2			2	2	2			2	2	2				2	2	2		1	1	1		2	2	1	1							
	F	1	1	2			2	2	2			2	2	2				2	2	2		1	1	1		2	2	1	1							
	Rs	1	1	2			2	2	2			2	2	2				2	2	2		1	1	1		2	2	1	1							
dark-eyed junco	B		1	1	2	1	1					1	1	2	1	1		1	1	2		1	1	2		2	2	2	2	2	2					
	F	1	1	1																																

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
yellow-headed blackbird	XAXA	7	6	B													Local breeder; summer and migrant populations; W. WA. and W. OR.; spotty distribution.
				F													
				Rs													
Brewer's blackbird	EUCY	7	24	B													Permanent resident; W. WA. and W. OR.; lower elevations.
				F													
				Rs													
brown-headed cowbird	MOAT	7	34	B													Permanent, summer, winter, and migrant populations; W. WA. and W. OR.; primarily lower elevations around agricultural land.
				F													
				Rs													
northern oriole	ICGA	9	20	B													Summer and migrant populations; W. WA. and W. OR.; lower elevation interior valleys.
				F													
				Rs													
rosy finch	LEAR	4	6	B													Winter resident of lowlands, summer resident in alpine areas; W. WA. and W. OR.
				F													
				Rs													
pine grosbeak	PIEN	11	23	B													Permanent resident at higher elevations, winter and spring visitor; W. WA. and W. OR.; rare.
				F													
				Rs													
purple finch	CARPU	11	29	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
Cassin's finch	CACAS	11	23	B													Summer resident; W. WA.; occasional permanent resident; W. OR.; rare; more common in S.W. OR.
				F													
				Rs													
house finch	CARME	9	28	B													Permanent resident; W. WA. and W. OR.; lower elevations, primarily around human habitation.
				F													
				Rs													
red crossbill	LOXCU	10	23	B													Permanent resident; W. WA. and W. OR.; nests at higher elevations.
				F													
				Rs													
white-winged crossbill	LOLE	10	16	B													May breed at higher elevations; W. WA.; summer and winter populations; W. WA. and W. OR.; rare and irregular.
				F													
				Rs													
■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.																	

■ B-Breeding; □ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{2/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
yellow-headed blackbird	r.c.: 2-6/clutch, avg. 4. h.r.: 1 mile radius. t.s.: 320 ft² - 1.5 acres.	B								1			1		1	1								1	1								
			F							1			1		1	1		1					1	1									
			Rs							1			1		1	1		1					1	1									
Brewer's blackbird	r.c.: 3-7/clutch, 1-2 broods/year. h.r.: up to 6.2 miles radius. t.s.: immediate vicinity nest and perch.	B														2				1	1			2	1	1							
			F			1									1		1	1	2	2		1	1	2									
			Rs			2									1				1	2	1	1	1	1									
brown-headed cowbird	r.c.: 4-30 + /clutch, avg. 10-12. h.r.: 12-40 acres.	B																		1	1	1											
			F															1	1	1	1												
			Rs																1	1	1												
northern oriole	r.c.: 3-6/clutch. h.r.: 2 acres. t.s.: 13 ft². density: 16-25 males/100 acres.	B																			1	1			1								
			F																	2	1			1									
			Rs																	2	1			1									
rosy finch	r.c.: 2-6/clutch. h.r.: 0.5 mile radius around nest. t.s.: 100 foot radius around nest.	B																													1		
			F															2															
			Rs																											1	2		
pine grosbeak	r.c.: 2-6/clutch, avg. 4. t.s.: 26 acres.	B																				1	1										
			F																			1	1										
			Rs																			1	1										
purple finch	r.c.: 3-6/clutch. density: 22 males/100 acres.	B														2					1	1			2								
			F												2					1	1			2									
			Rs												2					1	1			2									
Cassin's finch	r.c.: 3-6/clutch. t.s.: 25-100 foot/diameter around female. density: up to 6 males/100 acres.	B																			1												
			F																		1												
			Rs																		1												
house finch	r.c.: 2-6/clutch, 2-3 broods/year. t.s.: up to 17 acres, avg. 0.8 acre.	B																			2	1	1			2	2		2				
			F																		1	1	1			2							
			Rs																		2	1	1			2	2		2				
red crossbill	r.c.: 2-5/clutch.	B																															
			F																														
			Rs																														
white-winged crossbill	r.c.: 2-5/clutch.	B																															
			F																														
			Rs																														

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																				
					Dry hillsides			Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					1	1	2	1	2	3	4	5	6	1	2	3	4	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6		
					Grass-forb	Grass-forb	Shrub	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth
BIRDS																																									
yellow-headed blackbird	XAXA	7	6	B																																					
				F																																					
				Rs																																					
Brewer's blackbird	EUCY	7	24	B						1	2																														
				F				1	2	2																															
				Rs						2	2																														
brown-headed cowbird	MOAT	7	34	B			1		1	1	2	2	2		1	1	2		1	1	2	2	2		1	1	2	2	2		1	1	2	2	2						
				F	1	1	2	1	2	2						1	2	2		1	2	2																			
				Rs			1		1	1	2	2	2		1	2	2		2	1	2	2	2		2	1	2	2	2		1	1	2	2	2						
northern oriole	ICGA	9	20	B						2	2	1	1			2	2																								
				F			2		2	2	2	1	1		2	2	2																								
				Rs					2	2	2	1	1		2	2	2																								
rosy finch	LEAR	4	6	B																																					
				F																																					
				Rs																																					
pine grosbeak	PIEN	11	23	B																																1	1				
				F																																	2	2			
				Rs																																		1	1		
purple finch	CARPU	11	29	B						2	2	1	1			2	2			2	2	2	2			2	2	1	1			1	2	2	1						
				F				2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1	2	2	1				
				Rs						2	2	1	1			2	2			2	2	2	2			2	2	1	1			1	2	2	1						
Cassin's finch	CACAS	11	23	B																								2	2	2				2	2	2					
				F	2	2	2																					2	2	2	2	2	2	2	2	2					
				Rs																										2	2	2				2	2	2			
house finch	CARME	9	28	B			1			2	1		2	2			2				2						2	2					1	2		2	2				
				F	2	1	1	1	1	1			2	2	2			2	2			2	2				2	2	2				1	1	2		2				
				Rs			1			2	1		2	2				2				2							2	2				1	2		2	2			
red crossbill	LOXCU	10	23	B																															2	2					
				F																																2	2				
				Rs																																2	2				
white-winged crossbill	LOLE	10	16	B																																					
				F																																2	2	2			
				Rs																																2	2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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yellow-headed blackbird	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								</

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
BIRDS																	
common redpoll	CAFL	11	13	B													Migrant and winter visitor; W. WA. and W. OR.; irregular and rare.
				F													
				Rs													
pine siskin	CAPI	11	32	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
lesser goldfinch	CAPS	7	20	B													Irregular summer visitor to most of W. WA.; permanent resident; extreme S.W. WA. and W. OR.
				F													
				Rs													
American goldfinch	CATR	8	23	B													Permanent resident; W. WA. and W. OR.
				F													
				Rs													
evening grosbeak	COVE	11	33	B													Permanent resident, W. WA. and W. OR.; nests at higher elevations.
				F													
				Rs													
MAMMALS																	
Virginia opossum	DIVI	5	29	B													May breed all year in some areas. May breed in lower elevation conifer forests; W. WA. and W. OR.
				F													
				Rs													
Pacific water shrew	SOBE	16	24	B													Found near small streams, marshes; uses down logs for cover; most abundant at lower elevations; W. WA. and W. OR.
				F													
				Rs													
masked shrew	SOCI	15	24	B													W. WA. — rare.
				F													
				Rs													
dusky shrew	SOMO	15	34	B													Breeds until September in some areas; requires moist, well vegetated area, down logs; dense forests up to alpine zones; W. WA. and N.W. OR.
				F													
				Rs													
Pacific shrew	SOPAC	15	28	B													Requires down logs, thickets, ground debris for cover and feeding; W. OR.
				F													
				Rs													
water shrew	SOPAL	16	16	B													Young born March through July; strictly riparian, occurs in most forest types; W. WA. and W. Oregon Cascades to 3,000 ft., Olympic Peninsula.
				F													
				Rs													
■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.																	

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
BIRDS																																	
common redpoll					B																												
					F															2	2	2											
					Rs															2	2	2											
pine siskin	r.c.: 1-6/clutch, 1-2 broods/year. t.s.: 3-6 foot/diameter around nest. density: up to 14 males/100 acres.				B																												
					F														1	1	1	1											
					Rs																1	1											
lesser goldfinch	r.c.: 3-6/clutch. h.r.: 0.5 mile radius around nest. t.s.: 100-300 foot radius around nest. density: 15-18 males/100 acres.				B																												
					F																1												
					Rs																	1											
American goldfinch	r.c.: 2-7/clutch. h.r.: 300-2600 foot radius. t.s.: 10-90 foot/diameter around nest.				B																												
					F																1	1		1	1	2							
					Rs																	1		1	1	2							
evening grosbeak	r.c.: 2-5/clutch. density: up to 53 birds/100 acres.				B																												
					F																1												
					Rs																	1											
MAMMALS																																	
Virginia opossum	r.c.: 4-11/litter, avg. 7.5; 2 litters/year. h.r.: up to 58 acres.				B		2			1	1	1		2	2	2	1	1									1	1	1	1			
					F		2			1	1	1		2	2	2	1	1		2	1	1	1		1	1		1					
					Rs		2			1	1	1		2	2	2	1	1							1	1	2	1					
Pacific water shrew	r.c.: 2-10/litter, avg. 1-2 litters/year.				B		2			1		2	2	2			1	1								2	1		1				
					F		2			1		2	2	2			1	1									2	1		1			
					Rs		2			1		2	2	2			1	1									2	1		1			
masked shrew	r.c.: 2-10/litter, avg. 4.4. h.r.: 0.1 acre.				B					2	2	2	2	2	2		2	2	2		2	1			1	1	1		2				
					F					2	2	2	2	2	2		2	2	2		2	1			1	1	1		2				
					Rs					2	2	2	2	2	2		2	2	2		2	1			1	1	1		2				
dusky shrew	r.c.: 3-8/litter, avg. 4; 1-2 litters/year. h.r.: up to 10,700 ft². m.h.: up to 5 acres/population.				B		2			2	1	2	1	2	1	2		1	1	2		2	2		2	2		1					
					F		2			2	1	2	1	2	1	2		1	1	2		2	2		2	2		1					
					Rs		2			2	1	2	1	2	1	2		1	1	2		2	2		2	2		1					
Pacific shrew	r.c.: 2-6/litter.				B					1	1		1	2	2	2		1	1	1	2	2		2	2			1					
					F					1	1		1	2	2	2		1	1	1	2	2		2	2			1					
					Rs					1	1		1	2	2	2		1	1	1	2	2		2	2			1					
water shrew	r.c.: 5-8/litter, avg. 6; 2-3 litters/year.				B					1	1		1	2	2	2	2								2	1	1		1				
					F					1	1		1	2	2	2	2									2	1	1		1			
					Rs					1	1		1	2	2	2	2									2	1	1		1			

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																															
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer- hardwood forest						Mixed coniferous forest (SW Oregon)					
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	
BIRDS																																				
common redpoll	CAFL	11	13	B																																
				F	2								2	2	2	2											2	2	2	2	2	2				
				Rs									2	2	2	2											2	2	2	2	2	2				
pine siskin	CAPI	11	32	B						2	2	2	2			1	1															2	1	1	1	
				F				2	2	2	2	2	2	2	1	1										2	2	2	2	2	2	1	1	1	1	
				Rs						2	2	2	2			1	1											2	2	2	2			2	1	1
lesser goldfinch	CAPS	7	20	B			1		1	1	2	2	2																							
				F	2	1	1	1	1	1	2	2	2													2	2	2								
				Rs			1		1	1	2	2	2																2	2						
American goldfinch	CATR	8	23	B			1		1	1	2					1	1	2																		
				F	1	1	1	1	1	1				1	1	1											2	2	2							
				Rs			1		1	1	2				1	1	2												2	2	2					
evening grosbeak	COVE	11	33	B														2														1	1	1		
				F			2		2	2	2	2	2		2	2	2		2	2	2	2	2		2	2	2	2	2	2		1	1	1	1	
				Rs													2																1	1	1	
MAMMALS																																				
Virginia opossum	DIVI	5	29	B				1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
				F				1	1	1	1	1	2	2	2	2	2	1	1	1	2	1	2	1	1	1	2	1	2	1	1	1	2	1	2	
				Rs				1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2
Pacific water shrew	SOBE	16	24	B										2	2	2	2										2	2	2	2	2	2				
				F										2	2	2	2											2	2	2	2	2	2			
				Rs										2	2	2	2												2	2	2	2	2	2		
masked shrew	SOCI	15	24	B				1	1		2	2																								
				F				1	1		2	2																								
				Rs				1	1		2	2																								
dusky shrew	SOMA	15	34	B										2	2	2	1										2	2	2							
				F										2	2	2	1											2	2	2						
				Rs										2	2	2	1												2	2	2					
Pacific shrew	SOPAC	15	28	B										2	1	2	2															2	2	2		
				F										2	1	2	2																2	2	2	
				Rs										2	1	2	2																2	2	2	
water shrew	SOPAL	16	16	B																																
				F																																
				Rs																																

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species √	Habitat use √	Plant communities and stand conditions ^{8/}																																			
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland									
																												Herbaceous wetland		Hardwood and shrubby wetland		Coniferous wetland					
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth						
BIRDS																																					
common redpoll	B																																				
	F	2	2	2	2	2	2																		2	2	2	2		2	2						
	Rs		2	2	2	2	2																			2	2	2		2	2						
pine siskin	B			2	1	1	1			2	1	1	1			2	1	1	1			2	1			2	1			2	1						
	F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	Rs			2	1	1	1			2	1	1	1			2	1	1	1			2	1			2	1			2	1						
lesser goldfinch	B																																				
	F																																				
	Rs																																				
American goldfinch	B		2	2																										2	2						
	F	2	2	2																									2	2							
	Rs		2	2																									2	2							
evening grosbeak	B				1	1					1	1	1					1	1	1							1			1	1						
	F		1	1	1	1			1	1	1	1	1			1	1	1	1							1	1	1	1	1	1						
	Rs				1	1					1	1	1					1	1	1							1			1	1						
MAMMALS																																					
Virginia opossum	B	2	2	2	2	2																						1	1	1							
	F	2	2	2	2	2																						1	1	1							
	Rs	2	2	2	2	2																							1	1							
Pacific water shrew	B	2	2	2	2	2	2	2	2	2	2	2																2	2	2							
	F	2	2	2	2	2	2	2	2	2	2	2																2	2	2							
	Rs	2	2	2	2	2	2	2	2	2	2	2																2	2	2							
masked shrew	B	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2										2	2	2							
	F	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2										2	2	2							
	Rs	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2										2	2	2							
dusky shrew	B	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2						
	F	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2							
	Rs	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2							
Pacific shrew	B	2	1	2	2	2	2	2	1	2	2	2	2												2	2		2	2	2							
	F	2	1	2	2	2	2	2	1	2	2	2	2												2	2		2	2	2							
	Rs	2	1	2	2	2	2	2	1	2	2	2	2												2	2		2	2	2							
water shrew	B	**					**					**					**								2		2	1	1	1	1	2	2	1	1	1	1
	F	**					**					**					**								2		2	1	1	1	1	2	2	1	1	1	1
	Rs	**					**					**					**								2		2	1	1	1	1	2	2	1	1	1	1

* * Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Seasonal occurrence and activity												Comments ^{6/}
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
Trowbridge's shrew	SOTRO	15	32	B													Breeding period varies with location; uses drier sites than most shrews; W. WA. and W. OR.
				F													
				Rs													
vagrant shrew	SOVA	15	38	B													Young may be born Jan. through mid-Nov.; most abundant shrew; most abundant near water; W. WA. and W. OR.
				F													
				Rs													
shrew-mole	NEGI	15	34	B													Breeds Feb.- Sept., primarily Mar.- May; needs deep, friable soils with high humus, abundant litter; uses stumps, down logs for cover, feeding, nesting; W. WA. and W. OR.
				F													
				Rs													
broad-footed mole	SCLA	15	40	B													Uses openings with deep, friable, moist soil within most forest types; interior southern OR.
				F													
				Rs													
coast mole	SCOR	15	34	B													Uses forest as well as meadows; occurs W. WA.; N.W. OR., southern OR. coast.
				F													
				Rs													
Townsend's mole	SCTO	15	24	B)													Uses subalpine habitats only in Olympics; primarily uses meadows; W. WA. and W. OR.
				F													
				Rs													
pallid bat	ANPA	4	21	B													Hibernates; W. OR. south of Eugene.
				F													
				Rs													
big brown bat	EPFU	14	33	B													Hibernates during winter; W. WA. and W. OR.
				F													
				Rs													
silver-haired bat	LANO	14	28	B													Mates in fall, delayed fertilization in spring, births June and July; unknown whether hibernates or migrates during winter; W. WA. and W. OR.
				F													
				Rs													
hoary bat	LACI	11	25	B													Mates in fall, births May-June; migrates out of area Sept.- Mar.; W. WA. and W. OR.
				F													
				Rs													
California myotis	MYOCA	14	27	B													Mates in fall, delayed fertilization in spring; hibernates during winter.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{4/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands				Edges						Habitat features							
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
MAMMALS																																	
Trowbridge's shrew	r.c.: 1-6/litter, 2-3 litters/year.	B	1		2	2	2	2		2																			1				
		F	1		2	2	2	2		2																			1				
		Rs	1		2	2	2	2		2																			1				
vagrant shrew	r.c.: 2-9/litter, avg. 6; 1-2 litters/year. h.r.: 0.25-0.8 acre.	B	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2					2				
		F	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2					2				
		Rs	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2					2				
shrew-mole	r.c.: 1-5/litter.	B	2		1	1	1	2	1	1	2		1		1														1				
		F	2		1	1	1	2	1	1	2		1		1													1					
		Rs	2		1	1	1	2	1	1	2		1		1													1					
broad-footed mole	r.c.: 2-5/litter, 1 litter/year.	B			1	1												1											2				
		F			1	1												1											2				
		Rs			1	1												1											2				
coast mole	r.c.: 2-4/litter, 1 litter/year. h.r.: 1 acre. m.h.: 2 acres /pair.	B			2	2	2	2	2	2								1	2	2	2	1	2	1					2				
		F			2	2	2	2	2	2								1	2	2	2	1	2	1					2				
		Rs			2	2	2	2	2	2								1	2	2	2	1	2	1					2				
Townsend's mole	r.c.: 1-4/litter, 2 litters/year. h.r.: up to 2.5 acres.	B			2	2	2		2	2								1	1	2	1	1	2	2					2				
		F			2	2	2		2	2								1	1	2	1	1	2	2					2				
		Rs			2	2	2		2	2								1	1	2	1	1	2	2					2				
pallid bat	r.c.: 1-3/litter, 1 litter/year.	B																											2		1		1
		F																1															
		Rs																											2		1		1
big brown bat	r.c.: 1/litter, 1 litter/year.	B			1	1																							1		1		1
		F	2		1	1												1		1	1												
		Rs			1	1																							1		1		1
silver-haired bat	r.c.: 1-2/litter, 1 litter/year.	B			2	2			2	2	2	2						2											1				
		F																	2	1	1			2									
		Rs			2	2			2	2	2	2						2						2	1		2		2		2		
hoary bat	r.c.: 1-4/litter, avg. 2; 1 litter/year.	B																															
		F			1	1	1		1	1	1		1					2	1	1													
		Rs			1	1	1		1	1	1																						
California myotis	r.c.: 1/litter, 1 litter/year.	B																										1		1		1	
		F	2		1	1	1		1	1	1	1	1	1		1		1	1	1	1	1	1										
		Rs																										1		1		1	

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																								
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)														
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth										
MAMMALS																																													
Trowbridge's shrew	SOTRO	15	32	B										1	1	1			2	2	2	2			2	2	2	2			2	2	2	2			2	2	2	2					
				F										1	1	1			2	2	2	2			2	2	2	2			2	2	2	2			2	2	2	2					
				Rs										1	1	1			2	2	2	2			2	2	2	2			2	2	2	2			2	2	2	2					
vagrant shrew	SOVA	15	38	B			2	2	2	2	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1					
				F			2	2	2	2	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1					
				Rs			2	2	2	2	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1						
shrew-mole	NEGI	15	34	B									2	1	1	1	2	2	2	1	1	1			2	2	1	1	2	2	2	1	1	2	2	2	1	1	1						
				F									2	1	1	1	2	2	2	1	1	1			2	2	1	1	2	2	2	1	1	2	2	2	1	1	1						
				Rs									2	1	1	1	2	2	2	1	1	1			2	2	1	1	2	2	2	1	1	2	2	2	1	1	1						
broad-footed mole	SCLA	15	40	B	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2					
				F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2				
				Rs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2					
coast mole	SCOR	15	34	B				1	1	1	2	2	2	1	1	1	2								1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
				F				1	1	1	2	2	2	1	1	1	2								1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
				Rs				1	1	1	2	2	2	1	1	1	2								1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
Townsend's mole	SCTO	15	24	B									2	2	2										2	2	2						2	2											
				F										2	2	2										2	2	2						2	2										
				Rs										2	2	2											2	2	2						2	2									
pallid bat	ANPA	4	21	B									2																											2	2				
				F	1	1	1	1	2	1	2	1	2																					1		1	2	1	2						
				Rs						2	2	2	2																									2	2	2					
big brown bat	EPFU	14	33	B									2	1													2	1					2	1					2	1					
				F	1	2		1	2	1	2	1	2	1	2	2	2	1	2	2	2		1	2	1	2			1		2			1		2									
				Rs									2				2											2	1					2	1				2	1					
silver-haired bat	LANO	14	28	B									2													2	2	1					2	1					2	2	1				
				F	2	2	2	2	1	1	2	1	2	2	1	1	2	2		1	2	1	2	2		1	2	1	2	2		1	2	1	2	2		1	2	1	2				
				Rs							2	1	2				2						2	2	1					2	1							2	2	1					
hoary bat	LACI	11	25	B																										2	2							1	1						
				F					1	1	2	1	2								1	1	2	1	2			1	2	1	2		1	1	2	1									
				Rs									2													1	2	1			2	2	2	2				2	1	2	1				
California myotis	MYOCA	14	27	B																										2	2	2						2	2	2					
				F		2	2	1	2	1	2	2	2	1	2	1		1		1	2	2		1		1	2	2	1	2	2	1	2	1	1			1							
				Rs																										2	2	2						2	2	2					

B-Breeding; F-Feeding, Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																																	
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland							
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland	
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth				
MAMMALS																																			
Trowbridge's shrew	B				1	1	1				1	1	1				2	2	2				2			2	2				2	1	1		
	F				1	1	1				1	1	1				2	2	2				2			2	2				2	1	1		
	Rs				1	1	1				1	1	1				2	2	2				2			2	2				2	1	1		
vagrant shrew	B	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2					1	1	2	2	2	2	2	2		
	F	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2					1	1	2	2	2	2	2	2		
	Rs	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2					1	1	2	2	2	2	2	2		
shrew-mole	B	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	2	2	2	2	1	2		
	F	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	2	2	2	2	1	2		
	Rs	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	2	2	2	2	1	2		
broad-footed mole	B	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2		
	F	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2		
	Rs	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2		
coast mole	B	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				1	1	1	2	2	2		
	F	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				1	1	1	2	2	2		
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2				1	1	1	2	2	2		
Townsend's mole	B	1	2	2				2	2	2				2	2												1	2	2		2	2			
	F	1	2	2				2	2	2				2	2												1	2	2		2	2			
	Rs	1	2	2				2	2	2				2	2												1	2	2		2	2			
pallid bat	B																						2									2	2		
	F																			1	2	1	2							1	2	1	2		
	Rs																						2									2	2		
big brown bat	B					2	1					1	1				2	2				2									1	1			
	F	1		2		2		1		2	2	2		2		2		2		2		2		1	1	1	1			1	1	1	2		
	Rs					2	1					1	1				2	2				2									1	1			
silver-haired bat	B					2	2					2	2																		2	1		2	
	F	2		1	2	1		2		1	2	1	2														2			1	2	1	2		
	Rs			2	1	2	1			2	1	2	1																		2	1		2	
hoary bat	B					1	1					1	1																						
	F		1	1	2	1	2		1	1	2	1	2									1	1						1	1	2	1	2		
	Rs			2	2	2	1			2	1	2	1							2	2	2	2							2	1	2	1		
California myotis	B				2	2	1	1				2	2	2																	2	2	1		
	F	1	2	1	2	2	2	1	2	1	2	2	2						1	2	2		1	2	1	1						2	2		
	Rs				2	1	1					2	2	2							2											2	2	2	

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↓	Letter code ↓	Life form ↓	Versatility rating ↓	Habitat use ↓	Seasonal occurrence and activity												Comments ↓
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
long-eared myotis	MYEV	14	30	B													Hibernates during winter months; W. WA. and W. OR.
				F													
				Rs													
Keen's myotis	MYKE	14	21	B													No information available on reproductive habits; unknown whether migrates or hibernates in area during winter; Olympic Peninsula and Cascade Range north to Mt. Baker, W. WA.
				F													
				Rs													
little brown myotis	MYLU	14	34	B													Mates in fall, delayed fertilization in spring after hibernation; hibernates in W. WA. and W. OR.; prefers forests.
				F													
				Rs													
fringed myotis	MYTH	14	30	B													Winter habits unknown; S.W. WA. and W. OR.
				F													
				Rs													
long-legged myotis	MYVO	14	32	B													Hibernates in area, some may migrate; W. WA. and W. OR.
				F													
				Rs													
Yuma myotis	MYYU	14	30	B													Mates in fall, delayed fertilization in spring, births May-June. Unknown whether hibernates in study area or migrates during winter.
				F													
				Rs													
Townsend's big-eared bat	PLTO	4	11	B													Mates Sept.- Feb., delayed fertilization in spring, births May-July; hibernates W. WA. and W. OR.
				F													
				Rs													
Brazilian free-tailed bat	TABR	4	23	B													Mates Feb.- Mar., births Apr.- Aug.; hibernates; S.W. OR.
				F													
				Rs													
coyote	CALAT	15	42	B													W. WA. and W. OR.
				F													
				Rs													
gray fox	URCI	15	25	B													Forest species, avoids dense mature stands; W. OR.
				F													
				Rs													
red fox	VUVU	15	36	B													Native fox inhabits alpine/subalpine areas in Cascade Range. Extensive colonization in low altitude agricultural lands by introduced population. Little or no exchange between two populations; W. WA. and W. OR., except OR. coast and Coast Ranges south of Nestucca.
				F													
				Rs													

B-Breeding;

F-Feeding;

Rs-Resting;

See comments and Chapter 3 narrative.

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{5/}				Habitat use ^{4/}	Special and unique habitats ^{2/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
MAMMALS																																	
long-eared myotis	r.c.: 1/litter, 1 litter/year.	B					2	2			2	2	2															1				2	
		F		2			1	1			1	1	1	1	1		1														2		
		Rs																									1				2		
Keen's myotis		B																									1		1		1		
		F					1				1	1	1	1	2		1	1	1	1	2	2											
		Rs																								1		1		1			
little brown myotis	r.c.: 1-2/litter, 1 litter/year.	B																									2		2		1		
		F		2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1							2			
		Rs																								1		2		1			
fringed myotis	r.c.: 1/litter, 1 litter/year.	B																									2		1		1		
		F				1	1	1	1		1	1	1				1																
		Rs																								2		1		1			
long-legged myotis	r.c.: 1/litter, 1 litter/year.	B																									1		1		2		
		F		2			1	1	1		1	1	1	1	1		1																
		Rs																								1		1		1			
Yuma myotis	r.c.: 1/litter, 1 litter/year.	B					2	2	2	2	2	2	2	2	2												1		1		1		
		F		2			1	1	1	1	1	1	1	1	1		2	2	2	2	2	2	2										
		Rs					2	2	2	2	2	2	2	2	2											1		1		1			
Townsend's big-eared bat	r.c.: 1/litter, 1 litter/year.	B																													1		
		F		2			2	2	2		2	2	2				1														2		
		Rs																													1		
Brazilian free-tailed bat	r.c.: 1-2/litter, 1 litter/year.	B																															
		F					1	1			1	1	1				1													2			
		Rs																															
coyote	r.c.: 5-7/litter, 1 litter/year. h.r.: 4-16 mi².	B		2	2	2	2	2	2	2	2	2	2					2	1	2	1	2	2	2			1	2		1			
		F		2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2			2	2	2	2				
		Rs		2	2	2	2	2	2	2	2	2	2					2	1	2	1	2	2	2			1	2		1			
gray fox	r.c.: 2-7/litter. h.r.: up to 3 mi².	B					2	2	2		2		2														2	1		2	2		
		F					2	2	2		2		2		2		2										1		2				
		Rs					2	2	2		2		2														2	1		2	2		
red fox	r.c.: 2-10/litter, avg. 5.5; 1 litter/year. h.r., t.s.: 640-1920 acres. m.h.: 1-3 mi.²/pair.	B					2	2	2	2	2	2	2	2	2	2		2	1	1							1		2				
		F					2	2	2	2	2	2	2	2	2		1	1	1							2	2	2					
		Rs					2	2	2	2	2	2	2	2	2	2		2	1	1							1		2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																								
					Dry hillides		Mtn. shrubland and chaparral		Deciduous hardwood				Red alder forest		Evergreen hardwood				Conifer- hardwood forest				Mixed coniferous forest (SW Oregon)						
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth
MAMMALS																													
long-eared myotis	MYEV	14	30	B																							2	2	
				F											2	2						2	2					1	1
				Rs															2	2	2	2					2	1	1
Keen's myotis	MYKE	14	21	B																									
				F																									
				Rs																									
little brown myotis	MYLU	14	34	B								2	1			2					2	1					2	1	
				F	1	1	1	1	1	2			1	1	2		1	1	2			1	1	2		1	1	2	
				Rs							1	1	1			2	2			2	2	1	1			2	1	1	
fringed myotis	MYTH	14	30	B								2	2			2	2				2	2				2	2		
				F		1		1	1	2			2	2	2	2	1	1	2				1	1				1	1
				Rs								2	2			2	2				2	2					2	2	
long-legged myotis	MYVO	14	32	B							2	1	1			2				2	1	1				2	1	1	
				F		2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	1
				Rs							2	1	1			2			2	1	1					2	1	1	
Yuma myotis	MYYU	14	30	B								2	1			2	2				1	1				1	1		
				F		2	2	1	1	1	2	2	2	2	2	2	1	1	1	2			1	1	2		1	1	2
				Rs						2	2	1	1	2	2	2	2			2	1	1	1			2	2	1	1
Townsend's big-eared bat	PLTP	4	11	B																									
				F	1																					2	1	2	
				Rs																									
Brazilian free-tailed bat	TABR	4	23	B				2	2	2	2	2	2					2	2	2	2	2	2	2	2	2	2	2	
				F	1	1	1	1	2	1	2	1	2				1	2	1	2	1	2	1	2	1	2	1	2	
				Rs				2	2	2	2	2	2				2	2	2	2	2	2	2	2	2	2	2		
coyote	CALAT	15	42	B	1	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1	2	2	2	1	1	1	2	2	
				F	1	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1	2	2	2	1	1	1	2	2	
				Rs	1	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1	2	2	2	1	1	1	2	2	
gray fox	URCI	15	25	B			1		1	1	1					1	1	1			1	2	2			2	2		
				F		2	1	2	1	1	1			2	1	1	1	2	1	2	2			2	1	1	1		
				Rs			1		1	1	1					1	1	1		1	2	2			1	1	1		
red fox	VUVU	15	36	B	1	2	2	1	1	2	2			1	1	2	2							1	1	2	2		
				F	1	2	2	1	2	2	2			1	2	2	2							1	2	2	2		
				Rs	1	2	2	1	1	2	2			1	1	2	2							1	1	2	2		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																			
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland									
																												Herbaceous wetland		Hardwood and shrubby wetland		Coniferous wetland					
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth						
MAMMALS																																					
long-eared myotis	B				2	2	1				2	2	2	1				2	2	1				2	2			2	1					2	2	2	2
	F		2	2	2	2	1		2	2	2	1	1		2	2	2	1	1				2	2			2	1					2	2	1	1	
	Rs		2	2	2	1	1		2	2	2	1	1		2	2	2	1	1				2	2			2	1					2	2	2		
Keen's myotis	B				2	2	2				2	2	2					2	2	2						2							2	2			
	F	1	1					1	1					2	2															1	1	1	2	2	2	2	
	Rs				2	1	1				2	1	1					2	2	2						2								2	2		
little brown myotis	B				2	2	1				2	2	2					2	2	1						2							2	2	1		
	F	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	1	1	2	1	1	2			1	1	2	2	2	2	
	Rs			2	1	1	1			2	2	1	1			2	1	1	1					1		2	1					2	2	1	1		
fringed myotis	B					2	2					2	2											2	2									2	2		
	F	1	1	2				1	1	2													1	1	2	2				1	1	2					
	Rs					2	2						2	2										2	2									2	2		
long-legged myotis	B				2	1	1				2	1	1										2	1									2	1	1		
	F	2	1	1	2	1	2	2	1	2	2	2	2									2	1	1	1	2	2	2	2	2	2	1	1	2	2	2	
	Rs				2	1	1				2	1	1										2	1					2	1	1			2	1	1	
Yuma myotis	B				2	1	1				2	1	1										2	2									2	1	1		
	F	1	1	2		1																							2	1	1						
	Rs			2	2	1	1			2	2	1	1													2	2	2	2	2	2	2	2	1	1		
Townsend's big-eared bat	B	* *						* *																													
	F		2	1	2				2	1	2																2	1			2	1					
	Rs	* *						* *																													
Brazilian free-tailed bat	B																																				
	F																									1	2	1									
	Rs																																				
coyote	B	1	1	1	2	2	2	1	1	1	2	2	2	2	2					2				2	2	2		2	2	2	2	2	2	2	2	2	
	F	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2					2	2			2	2	2	2	1	1	2	2	2	2		
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2					2			2	2	2		2	2	2	2	2	2	2	2		
gray fox	B		2	2	2																					2	2	2			2	2	2				
	F	2	2	2	2																				2	2	2	2		2	2	2	2				
	Rs		2	2	2																					2	2	2			2	2	2				
red fox	B	1	1	2	2			2	2	2	2			1	1	1	1					2	2	2	2				2	2	2	2					
	F	1	2	2	2			2	2	2	2	2	2	1	1	1	1	2	2			2	2	2	2			2	2	2	2						
	Rs	1	1	2	2			2	2	2	2	2	2	1	1	1	1	2	2			2	2	2	2			2	2	2	2						

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

**Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Seasonal occurrence and activity												Comments ↴
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
black bear	URAM	15	36	B													Delayed implantation — mates May-Aug., embryo implanted in Dec.; may be dormant from Oct.- Mar.; W. WA. and W. OR.
				F													
				Rs													
grizzly bear	URAR	15	20	B													Delayed implantation — mates May-June, embryo implanted Oct.- Nov., births occur Nov.- Feb.; hibernation varies with location. Northern Cascades in WA., extirpated from OR.; rare and endangered in WA. May be extirpated from W. WA. also.
				F													
				Rs													
ringtail	BAAS	4	30	B													S.W. OR.
				F													
				Rs													
raccoon	PRLO	14	37	B													Riparian habitat important; W. WA. and W. OR.
				F													
				Rs													
wolverine	GUGU	5	18	B													Delayed implantation — mates May-July, births Feb.- Mar.; high elevations, Cascade Range; W. WA. and W. OR.
				F													
				Rs													
river otter	LUCA	16	32	B													Delayed implantation — mates Nov.- Apr., births Mar.- May; gestation up to 1 yr.; W. WA. and W. OR.
				F													
				Rs													
marten	MAAM	14	23	B													Delayed implantation — mates June-Aug., gives birth Apr.- May, dependent on mother through Sept.; W. WA. and W. OR., except Willamette Valley, OR.
				F													
				Rs													
fisher	MAPE	14	23	B													Delayed implantation — mates Feb.- Apr., gives birth following Feb.- Apr.; W. WA. and W. OR., except Willamette Valley, OR.
				F													
				Rs													
striped skunk	MEMEP	15	24	B													W. WA. and W. OR.
				F													
				Rs													
ermine	MUER	15	37	B													Delayed implantation — mates July-Aug., births Apr.- May; W. WA. and W. OR.
				F													
				Rs													
long-tailed weasel	MUFR	15	40	B													Delayed implantation — mates Apr.- Aug., young born Apr.- May; W. WA. and W. OR.
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; □ Rs-Resting; ■ See comments and Chapter 3 narrative.

Species ↴	Specific data ↴				Habitat use ↴	Special and unique habitats ↴																									
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves
MAMMALS																															
black bear	r.c.: 1-5/litter, avg. 5; 1 litter/year. h.r.: up to 19 mi². m.h.: 3200 acres.	B					2	2	2	2																2	1			2	
		F					1	1	1	1	1	1	1	1	1	1					1	1				2	2	2			
		Rs					2	2	2	2																2	1			2	
grizzly bear	r.c.: 2-3/litter; 1 litter/2-3 years. h.r.: up to 170 mi².	B																											2		
		F					2	2		2	2	2		2	2		1										2		2		
		Rs																									2		2		
ringtail	r.c.: 1-5/litter, 1 litter/year. h.r.: 1250-1500 acres.	B					2	2		2	2	2	2						2	2						2		1	1	1	
		F					2	2		2	2	2	2						2	2							1	1	1		
		Rs					2	2		2	2	2	2						2	2						2		1	1	1	
raccoon	r.c.: 1-7/litter. h.r.: 13-20 acres. m.h.: 2 stream miles/pair.	B					2	2	2	2	2	2	2	2	2	2										1				2	
		F		1	1	1	1	1	1	1	1	1	1	1	1	1					1	1	1								
		Rs		1	1	1	1	1	1	1	1	1	1	1	1	1										1	2			2	
wolverine	r.c.: 1-4/litter, avg. 3; 1 litter/year.	B																									1		1	1	
		F					1	1			1	2					1											2	1		
		Rs																									1		1	1	
river otter	r.c.: 1-5/litter. h.r.: up to 50 stream miles/year. m.h.: up to 50 stream miles/year.	B		1	1	1	1	1	1	1		1	1	1	2	2						1	1	1							
		F		1	1	1	1	1	1	1		1	1	1	2	2						1	1	1		2					
		Rs		1	1	1	1	1	1	1		1	1	2	2							1	1	1							
marten	r.c.: 2-4/litter, 1 litter/year. h.r.: up to 590 acres (Montana). m.h.: 640 acres/population.	B																									1	1		2	2
		F														2				1	1						1	2	2	2	
		Rs																									1	1		2	2
fisher	r.c.: 1-4/litter, avg. 3. h.r.: up to 15 mi² (Maine). m.h.: 3,200 acres/population.	B					2	2			2		2														1	1		1	
		F					2	2			2	2	2	2													1	2	1		
		Rs					2	2			2		2														1	1		1	
striped skunk	r.c.: 2-10/litter, avg. 6.5, 1 litter/year. h.r.: 31-114 acres (Ohio). m.h.: 640 acres/pair.	B		2			1	1	1	1	1	1	2	1	1		1	2	2	2	2	2					2				
		F		2			1	1	1	1	1	1	2	1	1		1	1	1	1	1	1					2	2	2		
		Rs		2			1	1	1	1	1	1	2	1	1		1	2	2	2	2	2					2				
ermine	r.c.: 4-13/litter. h.r.: 25-37 acres.	B					2	2	2	2	2																2	1		1	2
		F		2			2	2	2	2	2	2	2	2	2	2			1	1	2	2	2	2	2	2	2	1	2	1	2
		Rs		2			2	2	2	2	2																2	1		1	2
long-tailed weasel	r.c.: 4-9/litter. h.r.: 640 acres. t.s.: 25-50 acres. m.h.: 640 acres/pair.	B					2	2	2	2	2	2	2	2	2	2	2	2	2	2							2	1	2	2	2
		F		2			2	2	2	2	2	2	2	2	2	2	2	1	2	2	2						2	1	2	2	2
		Rs		2			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2						2	1	2	2	2

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																
					Dry hillides						Mtn shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																														
					Grass-forb		Grass-forb		Shrub		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth																																																																																																																																																																																																																																																																																																																																																																																																												
					1	2	1	2	1	2	1	2	3	4	5	6	1	2	3	4	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6																																																																																																																																																																																																																																																																																																																																																																																																																					
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black bear	URAM	15	36	B						2	2	2	2											2	1	1	1			2	2	2	2			2	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																													
				F	2	2	2	2	2	2	2	2	2	2	2	1	1							1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																									
				Rs						2	2	2	2													2	1	1	1			2	2	2	2			2	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																											
grizzly bear	URAR	15	20	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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				Rs																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
ringtail	BAAS	4	30	B	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																												
				F	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																											
				Rs	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																											
raccoon	PRLO	14	37	B	2	2	2	2	2	2	1	1	1	2	2	2	1	2	2	2	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																									
				F	2	2	2	1	1	1	2	2	2	2	1	1	1	2	1	1	1	2	1	1	1	2	2	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2																																																																																																																																																																																																																																																																																																																																																																																																																											
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wolverine	GUGU	5	18	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat, 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ↴																																										
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																
																												Herbaceous wetland	Hardwood and shrubby wetland				Coniferous wetland											
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth											
MAMMALS																																												
black bear	B			2	1	1	1			2	1	1	1				2	2	2				2				2				2				2	2	2	2			2	2	2	2
	F	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	Rs			2	1	1	1			2	1	1	1				2	2	2		2	2	2				2				2				2	2	2	2			2	2	2	2
grizzly bear	B							1	1	1	1	1	1	1	1	1	1	2	2	1	1																							
	F							1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2												2	2	2	2	2	2	2	2	2	2
	Rs							1	1	1	1	1	1	1	1	1	1	1	2	2	1	1																						
ringtail	B																									2	2	2					2	2	2									
	F																									2	2	2					2	2	2									
	Rs																									2	2	2					2	2	2									
raccoon	B	2	2	2	1	1	1	2	2	2	2	2	2												2	2	2	1			2	2	2	1	1	1	2	2	2	1	1	1	1	
	F	1	1	1	2	2	2	2	2	2	2	2	2												1	1	1	2	1		1	1	1	2	2	2	1	1	1	2	2	2	2	
	Rs	1	1	1	1	1	1	2	2	2	2	2	2												1	1	1	1	2		2	2	2	1	1	1	2	2	2	1	1	1	1	
wolverine	B											2	2				1	1	1				1	1																				
	F											2	2	2	2		1	1	1				1	1									2	2	1	1	1		1	1	1	1	1	
	Rs											2	2	2	2		1	1	1				1	1																				
river otter	B	2	2	2	2	2	2	2	2	2	2	2	2																	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
	F	2	2	2	2	2	2	2	2	2	2	2	2																	2	1	1	1	1	1	1	1	1	1	1	1	1		
	Rs	2	2	2	2	2	2	2	2	2	2	2	2																	2	1	1	1	1	1	1	1	1	1	1	1	1		
marten	B					1	1						1	1											2				2														1	1
	F			2	2	1	1			2	2	1	1			2	2	1	1				2	2			2	2											2	2	1	1		
	Rs					1	1						1	1					1	1				2				2													1	1		
fisher	B					1	1						1	1										2																		2	2	
	F				2	1	1					2	1	1				2	1	1				2	1															2	2	2	2	
	Rs					1	1						1	1					1	1				2																	2	2	2	2
striped skunk	B	2	2																							1	1					1	1											
	F	2	2																							1	1					1	1											
	Rs	2	2																								1	1					1	1										
ermine	B		2	2	1	1	1		2	2	1	1	1		2	2	1	1	1				2	2	1		2	2	1			2	2	1					1	1	1	1	1	1
	F	1	1	2	2	1	1	1	1	2	2	2	1	1	1	2	1	1	1	1	1	1	1	2	2	1	1	2	2			2	2	2	2	2	2	1	1	1	1	1	1	
	Rs		2	2	1	1	1		2	2	1	1	1		2	2	1	1	1				2	2	1		2	2	1			2	2	1					1	1	1	1	1	
long-tailed weasel	B	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	1	1	1	2	1	1	1	2				2	2	2	2	2	2	2	2	2	2
	F	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	1	1	1	2	1	1	1	2				2	2	2	2	2	2	2	2	2	2
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	1	1	1	2	1	1	1	2				2	2	2	2	2	2	2	2	2	2

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species √	Letter code √	Life form √	Versatility rating √	Habitat use √	Seasonal occurrence and activity												Comments √
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
mink	MUVI	14	38	B													W. WA. and W. OR.; partially aquatic.
				F													
				Rs													
spotted skunk	SPPU	15	28	B													Delayed implantation — mates Sept.- Oct., births Apr.- May; W. WA. and W. OR.
				F													
				Rs													
badger	TATA	15	28	B													Delayed implantation — mates Jul.- Aug., embryo implanted Feb., births Feb.- June; east of Medford and south of Crater Lake in W. OR.
				F													
				Rs													
mountain lion	FECO	4	36	B													Breeds all year, 60% of young born June-Sept.; W. WA. and W. OR., except Willamette Valley, OR.
				F													
				Rs													
lynx	LYCA	5	21	B													High elevations in North Cascade Range of W. WA. — rare.
				F													
				Rs													
bobcat	LYRU	4	38	B													W. WA. and W. OR.
				F													
				Rs													
harbor seal	PHVI	3	★	B													Estuaries, inland waters of Puget Sound, and along WA. and OR. coast.
				F													
				Rs													
elk	CEEL	5	32	B													Mates Sept.- Oct., births May-June; W. WA. and W. OR.
				F													
				Rs													
mule deer and black-tailed deer	ODHE	5	40	B													Mates Oct.- Dec., births May-July, primarily June; W. WA. and W. OR.
				F													
				Rs													
Columbian white-tailed deer	ODVILE	5	18	B													Mates Nov., births June; several areas along lower Columbia River and in Umpqua Valley in S.W. OR.; classified as endangered.
				F													
				Rs													
mountain goat	ORAM	4	14	B													Uses distinct winter and summer ranges; Olympics and high elevations of Cascade Range in W. WA.; a few introduced into North Cascades of W. OR.
				F													
				Rs													

■ B-Breeding, □ F-Feeding, □ Rs-Resting, ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{1/}																											
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian					Wetlands			Edges					Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves		
MAMMALS																																	
mink	r.c.: 2/10 litter, avg. 4, 1 litter/year. h.r.: 3 mi. along river (Montana). m.h.: 1 stream mile/pair.				B	1	1	1	1	1	1		1	1	2	1	1							1	1	1		1		2			
					F	1	1	1	1	1	1		1	1	1	1	1		1					1	1	1		2		2			
					Rs	1	1	1	1	1	1		1	1	1	1	1							1	1	1		1		2			
spotted skunk	r.c.: 1-5/litter. h.r.: 160-2560 acres. m.h.: 640 acres.				B					1	1																2	1					
					F					1	1						2	2				2	2						1		1		
					Rs					1	1											2	2					2	1				
badger	r.c.: 2-5/litter, avg. 2.5, 1 litter/year. h.r.: 585-2100 acres.				B																										2		
					F					2	2	2	2	2	2	2					1		1					2		2			
					Rs																											2	
mountain lion	r.c.: 1-5/litter, avg. 3; 1 litter/2 years. h.r.: up to 17.5 mi² (Idaho).				B																							2	1	1	1		
					F					2	1	2	1	2	2	2					2	1	1	2	1	1		2	1	1			
					Rs																							2	1	1	1		
lynx	r.c.: 1-4/litter. h.r.: up to 14 mi² (Montana).				B																							1					
					F					2	2										1	1											
					Rs																												
bobcat	r.c.: 1-7/litter, avg. 3.5; 1 litter/year. h.r.: up to 1140 acres.				B	2																2	2	2				2	1	1	1	1	
					F	2				1	1	1		1	1	1	1	1		1	2	1	1					1	1	1			
					Rs	2															2	1	1					1	1	1	1		
harbor seal	r.c.: 1 young/year.				B	1	1																										
					F	1	1			1																							
					Rs	1	1	1																									
elk	r.c.: 1 young (very rarely 2)/year; often only 1 young/2 years. h.r.: up to 6,000 acres.				B																	1	1	1									
					F	2				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
					Rs	2																1	1	1									
mule deer and black-tailed deer	r.c.: 1-3 young/year. h.r.: 74-640 acres.				B	2				2	2	2	2	2	2	2					1	1	1	1									
					F	2				2	2	2	2	2	2	2					1	1	1	1	1	1	2		2				
					Rs	2				2	2	2	2	2	2	2						1	1	1	1	1	1		2				
Columbian white-tailed deer	r.c.: 1-2 young/year. h.r.: 95-272 acres.				B					1	1	1										2	2	2									
					F					1	1	1									1	1	2	2									
					Rs					1	1	1										2	2	2					2				
mountain goat	r.c.: 1-2 young/year; usually 1. h.r.: 1.2-9.3 mi² (Colorado).				B																								1	1			
					F																									1	1		
					Rs																									1	1		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ↴	Letter code ↴	Life form ↴	Versatility rating ↴	Habitat use ↴	Plant communities and stand conditions ↴																															
					Dry hillsides		Mtn. shrubland and chaparral		Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					1 Grass-forb	1 Grass-forb	2 Shrub	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	
MAMMALS																																				
mink	MUVI	14	38	B		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
				F		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
				Rs		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
spotted skunk	SPPU	15	28	B		2	1	2	1	1				2	1	1		2	1	1				2	1	1				2	1	1				
				F		2	1	2	1	1				2	1	1		2	1	1				2	1	1				2	1	1				
				Rs		2	1	2	1	1				2	1	1		2	1	1				2	1	1				2	1	1				
badger	TATA	15	28	B	1	1	2	2									2						2						2							
				F	1	1	2	2									2						2						2							
				Rs	1	1	2	2									2						2						2							
mountain lion	FECO	4	36	B			1		2	2	2	2	2		2	2	2		2	2	2	2	2		2	2	2	2	2		1	1	2	1	2	
				F		1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	2
				Rs			1		2	2	2	2	2		2	2	2		2	2	2	2	2		2	2	2	2	2		1	1	2	1	2	
lynx	LYCA	5	21	B																																
				F																																
				Rs																																
bobcat	LYRU	4	38	B			1		2	2				2	2			2	2				2	2				2	2		1	1	2	2	2	
				F	1	1	1	2	2	2				2	2	2		2	2	2			2	2	2			1	1	1	2	2	2			
				Rs			1		2	2				2	2			2	2				2	2					1	1	2	2	2			
harbor seal	PHVI	3	★	B																																
				F																																
				Rs																																
elk	CEEL	5	32	B					2	1					2	2		2	2	1	1			2	2	1	1				1	1				
				F	1	1	1	1	1	2				1	2	2	2	1	1	2			1	1	2				1	1	2					
				Rs					2	2	1	2	2	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	1	1	1	1	
mule deer and black-tailed deer	ODHE	5	40	B			1		2	1	2	2	2	1	1	1	2	1	1	1	2	2		1	1	1	2	2	2	1	1	1	2	2	2	
				F	1	1	1	2	1	1	2	2		1	1	1		2	1	1	2	2	2	1	1	2				1	1	1	2	2	2	
				Rs	2	2	1	2	2	1	1	2	1	2	2	1	1	2	2	2	1	1	1	2	2	1	1	1	2	2	1	2	2	2	2	
Columbian white-tailed deer	ODVILE	5	18	B					2	1	1	2						2	1	1	2															
				F					1	1	1	2	2					1	1	2	2	2														
				Rs					2	2	1	1						2	1	1	2															
mountain goat	ORAM	4	14	B																																
				F																																
				Rs																																

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

*Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

Species ^{1/}	Letter code ^{1/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
mountain beaver	APRU	15	28	B													W. WA. and W. OR.
				F													
				Rs													
northern flying squirrel	GLSA	14	26	B													Fungi important in diet; W. WA. and W. OR.
				F													
				Rs													
hoary marmot	MACA	4	9	B													Occurs in Cascade Range of W. WA., north of Mount St. Helens.
				F													
				Rs													
yellow-bellied marmot	MAFL	4	11	B													Occurs west of the Cascade Range summit in a few areas of W. WA. and W. OR.
				F													
				Rs													
Olympic marmot	MAOL	4	8	B													Olympic Mts. of W. WA.
				F													
				Rs													
western gray squirrel	SCI GR	10	19	B													South of Tacoma in W. WA. and W. OR.
				F													
				Rs													
California ground squirrel	SPBEE	15	26	B													Hibernates, torpor lasts longer at higher elevations; in W. OR. and southcentral WA. where range is expanding northward.
				F													
				Rs													
golden-mantled ground squirrel	SPLA	15	24	B													Hibernates when snow covers the ground; Cascades and Siskiyou of W. OR. above 3,000 ft.
				F													
				Rs													
Cascade golden-mantled ground squirrel	SPSA	15	22	B													Cascade Range of W. WA. above 3,000 ft.
				F													
				Rs													
yellow-pine chipmunk	TAAM	15	32	B													May be in torpor during cold weather; higher elevations in Olympic Mts. and the Cascade Range of W. WA. and W. OR.
				F													
				Rs													
Siskiyou chipmunk	TASI	15	24	B													Goes into torpor during cold weather or times of snow accumulation; S.W. OR.; many mammalogists consider Siskiyou chipmunk to be subspecies of Townsend's chipmunk.
				F													
				Rs													

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

Species √	Specific data √				Habitat use √	Special and unique habitats √																									
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features										
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves
MAMMALS																															
mountain beaver	r.c.: 3-5/litter, 1 litter/year. h.r.: up to 0.5 acre. t.s.: defend nest site and burrow system.	B					2	2			2	2			2			1	1	1		1	1		1						
		F					2	2			2	2			2			1	1	1		1	1		1						
		Rs					2	2			2	2			2			1	1	1		1	1		1						
northern flying squirrel	r.c.: 1-6/litter, 1 litter/year. h.r.: 4.9 acres (family unit). m.h.: 360 acres.	B																		2				1							
		F					2	2			2	2	2							2					2						
		Rs																		2				1							
hoary marmot	r.c.: avg. 4-5/litter, 1 litter/year. h.r.: avg. 2 acres.	B																	2	2								1			
		F															1	2	2								1				
		Rs																	2	2							1				
yellow-bellied marmot	r.c.: 3-8/litter, 1 litter/year. h.r., t.s.: 0.5-5.0 acres.	B																	2	2							2	1			
		F																2	2	2						2	1				
		Rs																	2	2							2	1			
Olympic marmot	r.c.: 3-4/litter, 1 litter/year.	B																	2	2					2		1				
		F																	2	2					2		1				
		Rs																	2	2					2		1				
western gray squirrel	r.c.: 2-5/litter, avg. 4. h.r.: 0.5-2.5 acres. t.s.: 0.3-0.8 acre.	B																	1	2				1							
		F					2	2											1	2					2						
		Rs																	1	2				1							
California ground squirrel	r.c.: 3-15/litter, avg. 6; 1 litter/year. h.r.: 1-5 acres. t.s.: 0.5 acre. m.h.: 40 acres/population.	B																	2	2											
		F																	2	2	2										
		Rs																	2	2	2										
golden-mantled ground squirrel	r.c.: 2-8/litter, 1 litter/year. h.r.: 1.0-2.5 acres. t.s.: burrow and 100 feet around entrance. m.h.: 40 acres/population.	B																	2	2	2					1	2	1			
		F					2	2	2	2	2	2	2						2	2	2					1	2	1			
		Rs																	2	2	2					1	2	1			
Cascade golden-mantled ground squirrel	r.c.: 2-8/litter.	B																	2	2	2					1	2	1			
		F					2	2	2	2	2	2	2						2	2	2					1	2	1			
		Rs																	2	2	2					1	2	1			
yellow-pine chipmunk	r.c.: 3-8/litter, 1 litter/year. h.r.: 2.3-4.0 acres. m.h.: 80 acres.	B					2	2	2	2	2	2	2						2	2					2	2	2	1			
		F					2	2	2	2	2	2	2						2	2						2	2	1			
		Rs					2	2	2	2	2	2	2						2	2						2	2	2	1		
Siskiyou chipmunk	r.c.: 3-6/litter, 1 litter/year	B					2	2	2	2	2	2	2													1					
		F					2	2	2	2	2	2	2													1					
		Rs					2	2	2	2	2	2	2													1					





B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat, 2 - Secondary habitat.

Species ↴	Habitat use ↴	Plant communities and stand conditions ^{a/}																																																								
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland																														
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland																								
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth																			
MAMMALS																																																										
mountain beaver	B	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2																																				
	F	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2																																				
	Rs	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2																																				
northern flying squirrel	B				2	1	1				2	1	1				2	1	1																																							
	F				2	1	1				2	1	1				2	1	1								2																															
	Rs				2	1	1				2	1	1				2	1	1																																							
hoary marmot	B													1	2																																											
	F													1	2																																											
	Rs													1	2																																											
yellow-bellied marmot	B								1								1																																									
	F								1								1																																									
	Rs								1								1																																									
Olympic marmot	B								2								1	2																																								
	F								2								1	2																																								
	Rs								2								1	2																																								
western gray squirrel	B				2	2	2																																																			
	F				2	2	2	2																																																		
	Rs				2	2	2																																																			
California ground squirrel	B	1	2						2	2																																																
	F	1	2						2	2																																																
	Rs	1	2						2	2																																																
golden-mantled ground squirrel	B	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
	F	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	Rs	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
Cascade golden-mantled ground squirrel	B	2	2	2	2	2	2	2	1	1	2	1	2	1	1	1	1	1	1	2	1	1	2	2																																		
	F	2	2	2	2	2	2	2	1	1	2	1	2	1	1	1	1	1	1	2	1	1	2	2																																		
	Rs	2	2	2	2	2	2	2	1	1	2	1	2	1	1	1	1	1	1	2	1	1	2	2																																		
yellow-pine chipmunk	B		2	2	2				2	1	1	2	2	2	2	1	1	2	2	2	2	2																																				
	F		2	2	2				2	1	1	2	2	2	2	2	1	1	2	2	2	2																																				
	Rs		2	2	2				2	1	1	2	2	2	2	2	1	1	2	2	2	2																																				
Siskiyou chipmunk	B																																																									
	F																																																									
	Rs																																																									

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
Townsend's chipmunk	TATO	15	32	B													Goes into torpor during cold weather or times of snow accumulation; W. WA. and W. OR., except S.W. OR.
				F													
				Rs													
Douglas' squirrel	TADO	10	26	B													W. WA. and W. OR.
				F													
				Rs													
Botta's pocket gopher	THBO	15	16	B													No information on breeding in W. OR.; may breed all year in CA. and S.W. OR.
				F													
				Rs													
Camas pocket gopher	THBU	15	14	B													Primary habitat is agricultural and grazing land; Willamette Valley, OR.
				F													
				Rs													
western pocket gopher	THMA	15	20	B													Olympic Peninsula and south end Puget Sound, WA., and in W. OR.
				F													
				Rs													
northern pocket gopher	THTA	15	18	B													Occurs in Portland-Vancouver area and west of the crest of the Cascade Range at higher elevations; W. WA. and W. OR.
				F													
				Rs													
Heermann's kangaroo rat	DIHE	15	14	B													Reproductive period varies with location; S.W. OR., not on coast.
				F													
				Rs													
Great Basin pocket mouse	PEPA	15	18	B													Occurs where ponderosa pine-rabbit brush habitat extends into S.W. OR.
				F													
				Rs													
beaver	CASCAN	16	24	B													W. WA. and W. OR.
				F													
				Rs													
bushy-tailed woodrat	NECI	5	37	B													W. WA. and W. OR.
				F													
				Rs													
dusky-footed woodrat	NEFU	5	28	B													Willamette Valley, OR. south into S.W. OR.
				F													
				Rs													

 B-Breeding;
  F-Feeding;
  Rs-Resting;
  See comments and Chapter 3 narrative.

Species √	Specific data √				Habitat use √	Special and unique habitats √																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges				Habitat features											
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
MAMMALS																																
Townsend's chipmunk	r.c.: 3-6/litter, 1 litter/year. h.r.: 1.7 acres.	B				2	2	2	2	2	2	2									2	2			2		1		1			
		F				2	2	2	2	2	2	2								2	2			2		1						
		Rs				2	2	2	2	2	2	2	2								2	2			2		1		1			
Douglas squirrel	r.c.: 4-6/litter. h.r., t.s.: 1-2 acres.	B																			2	2				1						
		F					2	2												2	2					2						
		Rs																			2	2				1						
Botta's pocket gopher	r.c.: 3-12/litter, avg. 5 (embryo count); 1-2 litters/year. h.r.: 1300-2700 ft² t.s.: defend burrow system.	B					2	2	2	2	2	2	2							2			2									
		F						2	2	2	2	2	2	2						2			2									
		Rs						2	2	2	2	2	2	2						2			2									
Camas pocket gopher	r.c.: 3-5/litter, 1 litter/year. h.r.: burrow system, up to 800 feet in length.	B																		1	1	2	1									
		F																		1	1	2	1									
		Rs																		1	1	2	1									
western pocket gopher	r.c.: 4-6/litter, 1 litter/year.	B																		2	1	2	1									
		F																		2	1	2	1									
		Rs																		2	1	2	1									
northern pocket gopher	r.c.: 3-10/litter, avg. 5 (embryo count); 1-2 litters/year (California). m.h.: 40 acres/population.	B																		2	2	2										
		F																		2	2	2										
		Rs																		2	2	2										
Heermann's kangaroo rat	r.c.: 2-5/litter; up to 3 litters/year.	B																														
		F																														
		Rs																														
Great Basin pocket mouse	r.c.: 3-8/litter, 1 litter/year. h.r.: 0.1-1.0 acre. m.h.: 40 acres.	B																			1									2		
		F																			1									2		
		Rs																				1								2		
beaver	r.c.: 1-9/litter, avg. 3; 1 litter/year. h.r.: up to 500 acres. t.s.: up to 125 acres. m.h.: 1 stream mile/colony.	B	2				1	1	1			1	1	1	1	2		2					2	2	2							
		F		2				1	1	1			1	1	1	1	2		2						1	1						
		Rs	2					1	1	1			1	1	1	1	2		2					2	2	2						
bushy-tailed woodrat	r.c.: 1-6/litter; 1-2 litters/year. m.h.: 80 acres/population.	B	2				2	2	2	2	2	2	2								2						2	1	1	1	2	
		F		2				2	2	2	2	2	2	2								2						1	2	2		
		Rs	2					2	2	2	2	2	2	2									2				2	1	1	1	2	
dusky-footed woodrat	r.c.: 1-4/litter, 1-2 litters/year. h.r.: up to 46 acres.	B					2	2	2	2	2	2	2								2							2				
		F						2	2	2	2	2	2	2								2						2				
		Rs						2	2	2	2	2	2	2									2					2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																												
					Dry hillides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest						Evergreen hardwood						Conifer- hardwood forest						Mixed coniferous forest (SW Oregon)								
					1 Grass-forb		1 Grass-forb		2 Shrub		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth				
					1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2					
MAMMALS																																																	
Townsend's chipmunk	TATO	15	32	B					2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2												
				F					2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2										
				Rs					2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2									
Douglas' squirrel	TADO	10	26	B																																													
				F																																													
				Rs																																													
Botta's pocket gopher	THBO	15	16	B	1	1																																											
				F	1	1																																											
				Rs	1	1																																											
Camas pocket gopher	THBU	15	14	B				1	2																																								
				F				1	2																																								
				Rs				1	2																																								
western pocket gopher	THMA	15	20	B				1	2																																								
				F				1	2																																								
				Rs				1	2																																								
northern pocket gopher	THTA	15	18	B				1																																									
				F				1																																									
				Rs				1																																									
Heermann's kangaroo rat	DIHE	15	14	B	1	1	2	1	2																																								
				F	1	1	2	1	2																																								
				Rs	1	1	2	1	2																																								
Great Basin pocket mouse	PEPA	15	18	B	1	1	2																																										
				F	1	1	2																																										
				Rs	1	1	2																																										
beaver	CASCAN	16	24	B				**						**						**						**						**																	
				F				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
				Rs				**						**						**						**						**																	
bushy-tailed woodrat	NECI	5	37	B			2		2	2	2	2	2	2		1	1	1		2	2	2	2	2	2			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
				F		2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
				Rs			2		2	2	2	2	2	2	2	2	2	2	1	1	1		2	2	2	2	2	2			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
dusky-footed woodrat	NEFU	5	28	B			1		1	1	1	1	1		1	1	1											1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	
				F			1		1	1	1	1	1	1		1	1	1											1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1
				Rs			1		1	1	1	1	1	1		1	1	1											1	1	1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1

B-Breeding; F-Feeding; Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																								
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland														
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland								
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth											
MAMMALS																																										
Townsend's chipmunk	B	2	2	1	1	1	1	2	2	1	1	1	1			1	1	1	1					2	2	1	1		2	2	2	2	2	2	2	2	2	2	2	2	2	
	F	2	2	1	1	1	1	2	2	1	1	1	1			1	1	1	1					2	2	1	1		2	2	2	2	2	2	2	2	2	2	2	2	2	
	Rs	2	2	1	1	1	1	2	2	1	1	1	1			1	1	1	1					2	2	1	1		2	2	2	2	2	2	2	2	2	2	2	2	2	
Douglas' squirrel	B			1	1	1	1			1	1	1	1			1	1	1	1				2	2			2	2									2	2	2	2	2	
	F			1	1	1	1			1	1	1	1			1	1	1	1				2	2			2	2				2	2			2	2	2	2	2		
	Rs			1	1	1	1			1	1	1	1			1	1	1	1				2	2			2	2									2	2	2	2	2	
Botta's pocket gopher	B	1																										1	1						2							
	F	1																									1	1						2								
	Rs	1																									1	1						2								
Camas pocket gopher	B	1	2																										2	2					2	2						
	F	1	2																										2	2					2	2						
	Rs	1	2																										2	2					2	2						
western pocket gopher	B	1	2					1	2					1	2					2							2															
	F	1	2					1	2					1	2					2						2																
	Rs	1	2					1	2					1	2					2						2																
northern pocket gopher	B	1												2	2	2											2	2						2								
	F	1												2	2	2										2	2						2									
	Rs	1												2	2	2										2	2						2									
Heermann's kangaroo rat	B																																									
	F																																									
	Rs																																									
Great Basin pocket mouse	B																																									
	F																																									
	Rs																																									
beaver	B			**	*					**	*					**	*													2	1	1	2	2	2	2	2	1	1	2	2	2
	F			2	2	2				2	2	2				2	2	2					2	2	2					1	1	2	2	2		1	1	2				
	Rs			**	*					**	*					**	*													2	1	1	2	2	2	2	2	1	1	2	2	2
bushy-tailed woodrat	B		2	2	1	1	1		2	2	1	1	1		2	2	2	2	2		2	2	2		1	1	1			2	2	2	2	2	2	2	2	1	1	1		
	F	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1		2	2	2	2	2	2	2	2	2	1	1	1		
	Rs		2	2	1	1	1		2	2	1	1	1		2	2	2	2	2		2	2	2		1	1	1			2	2	2	2	2	2	2	1	1	1			
dusky-footed woodrat	B		1	1	1	1	1																		1	1	1			1	1	1	1	1	1	1	1	1	1	1		
	F		1	1	1	1	1																		1	1	1			1	1	1	1	1	1	1	1	1	1			
	Rs		1	1	1	1	1																		1	1	1			1	1	1	1	1	1	1	1	1	1			

* * Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species √	Letter code √	Life form √	Versatility rating √	Habitat use √	Seasonal occurrence and activity												Comments √
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
deer mouse	PEMA	15	42	B													Breeds all year in some areas; W. WA. and W. OR.; most widespread of all mammals.
				F													
				Rs													
pinon mouse	PETRU	4	12	B													Ground litter or talus required for cover; S.W. OR.
				F													
				Rs													
western harvest mouse	REME	15	16	B													Breeds all year at low elevations and early spring to late fall at high elevations; requires dense ground vegetation; S.W. OR.
				F													
				Rs													
white-footed vole	ARBAL	15	24	B													Found near small streams; occurs coast and Coast Ranges of Oregon; a few specimens from Cascades, Lane County, OR. — rare.
				F													
				Rs													
red tree vole	ARLO	10	14	B													Uses primarily Douglas-fir stands, W. OR., except Willamette Valley.
				F													
				Rs													
western red-backed vole	CLCA	15	16	B													W. OR. south of Columbia River except in Willamette Valley; found in dense, moist coniferous forests; active and probably breeds all year.
				F													
				Rs													
southern red-backed vole	CLGA	15	19	B													W. WA. north of Columbia River; found in coniferous forests and around openings in coniferous forests from sea level to high elevations; active throughout the year.
				F													
				Rs													
California vole	MICAL	15	12	B													Inhabits meadowland and grassy hillsides; S.W. OR.
				F													
				Rs													
gray-tailed vole	MICAN	15	12	B													Restricted to agricultural lands of Clark County, WA. and Willamette Valley, OR.
				F													
				Rs													
long-tailed vole	MILO	15	24	B													W. WA. and W. OR., except Willamette Valley, OR.
				F													
				Rs													
montane vole	MIMO	15	12	B													Extends to west side of Cascade Range in S.W. OR.
				F													
				Rs													

■ B-Breeding, □ F-Feeding, □ Rs-Resting, ■ See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{3/}	Special and unique habitats ^{1/}																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian						Wetlands				Edges						Habitat features						
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caes	
MAMMALS																																
deer mouse	r.c.: 1-9/litter, up to 6 litters/year. h.r.: 3.5-4.7 acres. m.h.: 40 acres/population.	B	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2	1	2	1	2		
		F	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	1	1		1	2	1	2		
		Rs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2	1	2	1	2		
~ pinon mouse	r.c.: 1-6/litter, avg. 3; 1 + litters/year. h.r.: 0.6-0.8 acres.	B																									1		1			
		F																								1		1				
		Rs																								1		1				
western harvest mouse	r.c.: 1-9/litter, 5-7 litters/year. h.r.: 1 acre. m.h.: 40 acres/population.	B				1	1	1	1	1	1	1	1																			
		F				1	1	1	1	1	1	1	1																			
		Rs				1	1	1	1	1	1	1	1																			
white-footed vole	r.c.: 2-4/litter.	B					1																				1					
		F					1																			1						
		Rs					1																			1						
red tree vole	r.c.: 1-4/litter. h.r.: 1 + trees.	B																														
		F																														
		Rs																														
western red-backed vole	r.c.: 1-6/litter; 3-4 litters/year	B	2																								1		2			
		F	2																							1						
		Rs	2																							1		2				
southern red-backed vole	r.c.: 3-8/litter; 2 litters/year. h.r.: 600-1100 yd². m.h.: 40 acres/population.	B	2			2	2		2	2	2	2	2	2	2		2			2		2					1		1			
		F	2			2	2		2	2	2	2	2	2	2	2		2			2		2				1		2			
		Rs	2			2	2		2	2	2	2	2	2	2	2		2			2		2				1		1			
California vole	r.c.: 1-9 litter, avg. 4; 2-5 litters/year. h.r.: up to 2.5 acres.	B															2		2													
		F															2		2													
		Rs															2		2													
gray-tailed vole	r.c.: 2-8/litter.	B				2	2	2	2	2	2	2	2	2	2		2	1	1		2	1										
		F				2	2	2	2	2	2	2	2	2	2		2	1	1		2	1										
		Rs				2	2	2	2	2	2	2	2	2	2		2	1	1		2	1										
long-tailed vole	r.c.: 2-7/litter, up to 4 litters/year. h.r.: up to 10 acres. m.h.: 40 acres/population.	B	2			1	1	2	1	2	2	2	2	2	2	1		1	1	2	2	1	1				1		1			
		F	2			1	1	2	1	2	2	2	2	2	2	1		1	1	2	2	1	1				2		2			
		Rs	2			1	1	2	1	2	2	2	2	2	2	1		1	1	2	2	1	1				1		1			
montane vole	r.c.: 1-9/litter, 1-5 litter/year. h.r.: 823 ft². t.s.: 33-66 feet from nest. m.h.: 20 acres/population.	B				1	1	1	1	1	1	1	1		1		1										2		2			
		F				1	1	1	1	1	1	1	1		1		1															
		Rs				1	1	1	1	1	1	1	1		1		1										2		2			

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{4/}	Habitat use ^{5/}	Plant communities and stand conditions ^{6/}																																									
					Dry hillsides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest						Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)					
					1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6												
					Grass-forb	Grass-forb	Shrub	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth	Grass-forb	Shrub	Open sap-pole	Closed sap-pole	Large sawtimber	Old growth											
MAMMALS																																														
deer mouse	PEMA	15	42	B	2	2	1	2	1	1	2	2	2	2	1	1	2	2	1	1	2	2	2	2	2	1	1	2	2	2	2	2	1	1	2	2	2									
				F	2	2	1	2	1	1	2	2	2	2	1	1	2	2	1	1	2	2	2	2	2	2	1	1	2	2	2	2	2	1	1	2	2	2								
				Rs	2	2	1	2	1	1	2	2	2	2	1	1	2	2	1	1	2	2	2	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2								
~ pinon mouse	PETRU	4	12	B	2	2	1																									2	1	1												
				F	2	2	1																										2	1	1											
				Rs	2	2	1																										2	1	1											
western harvest mouse	REME	15	16	B	1	1	2							1	2																	1	2													
				F	1	1	2										1	2															1	2												
				Rs	1	1	2										1	2															1	2												
white-footed vole	ARBAL	15	24	B											2	2	2														2	2	2	2	1	1										
				F														2	2	2											2	2	2	2	1	1										
				Rs														2	2	2											2	2	2	2	1	1										
red tree vole	ARLO	10	14	B																														2	2	2										
				F																															2	2	2									
				Rs																															2	2	2									
western red-backed vole	CLCA	15	16	B																														1	1	1										
				F																															1	1	1									
				Rs																															1	1	1									
southern red-backed vole	CLGA	15	19	B																																										
				F			2																																							
				Rs			2																																							
California vole	MICAL	15	12	B	1	1		1																									1													
				F	1	1		1																										1												
				Rs	1	1		1																									1													
gray-tailed vole	MICAN	15	12	B				2																																						
				F				2																																						
				Rs				2																																						
long-tailed vole	MILO	15	24	B		2	2							2	2	2																2	2	2												
				F		2	2							2	2	2																2	2	2												
				Rs		2	2							2	2	2																2	2	2												
montane vole	MIMO	15	12	B		1	2																									1	2													
				F		1	2																									1	2													
				Rs		1	2																									1	2													

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^J	Habitat use ^J	Plant communities and stand conditions ^B																																		
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland								
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland		
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth			
MAMMALS																																				
deer mouse	B	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2		1	1			1	1	1	2	2	2	2	2	
	F	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2		1	1			1	1	1	2	2	2	2	2	
	Rs	2	1	1	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2	2		1	1			1	1	1	2	2	2	2	2	
piñon mouse	B																																			
	F																																			
	Rs																																			
western harvest mouse	B																										1	1	2							
	F																										1	1	2							
	Rs																										1	1	2							
white-footed vole	B	2	2	2	2	1	1																					2	2	2	2	1	1	2	2	1
	F	2	2	2	2	1	1																					2	2	2	2	1	1	2	2	1
	Rs	2	2	2	2	1	1																					2	2	2	2	1	1	2	2	1
red tree vole	B				1	1	1					2	2																				2	2	2	
	F				1	1	1					2	2																			2	2	2		
	Rs				1	1	1					2	2																			2	2	2		
western red-backed vole	B				1	1	1				1	1	1				1	1	1							1										
	F				1	1	1				1	1	1				1	1	1							1										
	Rs				1	1	1				1	1	1				1	1	1							1										
southern red-backed vole	B				1	1	1				1	1	1				1	1	1							1						2	1	1		
	F				1	1	1				1	1	1				1	1	1							1					2	2	1	1		
	Rs				1	1	1				1	1	1				1	1	1							1					2	2	1	1		
California vole	B																										2									
	F																										2									
	Rs																										2									
gray-tailed vole	B	2																									1	2				2				
	F	2																									1	2			2					
	Rs	2																									1	2			2					
long-tailed vole	B	1	1	2				2	2	2				1	1	2											1	1	1	2		1	2			
	F	1	1	2				2	2	2				1	1	2										1	1	1	2		1	2				
	Rs	1	1	2				2	2	2				1	1	2										1	1	1	2		1	2				
montane vole	B																										1	2			1	2				
	F																										1	2			1	2				
	Rs																										1	2			1	2				

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species 1/	Letter code 1/	Life form 2/	Versatility rating 3/	Habitat use 4/	Seasonal occurrence and activity												Comments 5/
					January	February	March	April	May	June	July	August	September	October	November	December	
					MAMMALS												
creeping vole	MIOR	15	36	B												May breed year round on coast; W. WA. and W. OR., except Willamette Valley, OR.	
				F													
				Rs													
water vole	MIRI	15	10	B												Found near water; Cascade Range from 3,000-10,000 ft. elevation; W. WA. and W. OR.	
				F													
				Rs													
Townsend's vole	MITO	15	28	B												Requires dense grass-forb vegetation for cover; W. WA. and W. OR., most common at low elevations; uses subalpine only in Olympic Mts.	
				F													
				Rs													
muskrat	ONZI	16	12	B												Found in or near water with associated aquatic vegetation; W. WA., and coast and Coast Ranges north of Pistol River and in Willamette Valley, OR.	
				F													
				Rs													
heather vole	PHIN	15	14	B												Olympic and Cascade Ranges of W. WA. and W. OR., occasionally down to 2,000 ft. elevation.	
				F													
				Rs													
northern bog lemming	SYBO	15	10	B												Inhabits boreal meadows and clearings in extreme N. WA. — rare.	
				F													
				Rs													
house mouse	MUMU	15	6	B												Primarily in or near areas of human habitation; W. WA. and W. OR.	
				F													
				Rs													
Norway rat	RANO	15	★	B												Found in areas of human habitation; W. WA. and W. OR.	
				F													
				Rs													
black rat	RARA	5	8	B												Found in areas of human habitation; coastal and port cities.	
				F													
				Rs													
western jumping mouse	ZAPR	3	18	B												May hibernate up to 7 months; prefers moderately moist soil; Siskiyou Mts., Cascade Range south of Crater Lake in W. OR.	
				F													
				Rs													
Pacific jumping mouse	ZATR	3	32	B												Hibernates from Oct. until temperatures warm in spring; requires moist areas with abundant ground vegetation; W. WA. and coast; Coast Ranges, Willamette Valley and Cascade Range north of Crater Lake in OR.	
				F													
				Rs													

■ B-Breeding; ■ F-Feeding; ■ Rs-Resting; ■ See comments and Chapter 3 narrative.

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.

See footnotes at end of appendix.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{2/}	Special and unique habitats ^{2/}																																
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal				Riparian				Wetlands			Edges					Habitat features																
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves							
MAMMALS																																						
creeping vole	r.c.: 1-8/litter, 4-5 litters/year. h.r.: 0.1-0.2 acre.				B	2				1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1		1	2	2			1				
					F	2				1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1		1	2	2			1			
					Rs	2				1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1		1	2	2			1		
water vole	r.c.: 4-7/litter, 3 litters/year. m.h.: 0.5 stream mile/population.				B					1	1		1	1		2		1	2	1									1									
					F					1	1		1	1		2		1	2	1											1							
					Rs					1	1		1	1		2		1	2	1												1						
Townsend's vole	r.c.: 2-10/litter.				B	2	2	2		1	1	1	2	1	1		1	1		1	2		2	1														
					F	2	2	2		1	1	1	2	1	1		1	1		1	2		2	1														
					Rs	2	2	2		1	1	1	2	1	1		1	1		1	2		2	1														
muskrat	r.c.: 1-15, usually 6-8/litter; 2-4 litters/year. h.r.: up to 6 acres. m.h.: 1 stream mile/population.				B	2				1	1	1		1	1	1	1	2											1									
					F	2				1	1	1		1	1	1	1	2												1								
					Rs	2				1	1	1		1	1	1	1	2													1							
heather vole	r.c.: 2-8/litter. m.h.: 80 acres/population.				B						2			2											2	2	2	1						1				
					F						2			2													2	2	2	1								
					Rs						2			2														2	2	2	1						1	
northern bog lemming	r.c.: 2-8/litter. h.r.: up to 100 foot long burrow or runway.				B						1		1						1	2	1												2					
					F						1		1								1	2	1											2				
					Rs						1		1									1	2	1										2				
house mouse	r.c.: 3-12/litter, up to 6 litters/year. h.r.: up to 12,100 ft². t.s.: up to 28 ft².				B					2	2	2	2	2	2	2	2		2		2																	
					F					2	2	2	2	2	2	2	2		2		2																	
					Rs					2	2	2	2	2	2	2	2		2		2																	
Norway rat	r.c.: 6-8/litter, 6-8 litters/year. h.r.: up to 7900 ft².				B	2	2	2																														
					F	2	2	2																														
					Rs	2	2	2																														
black rat	r.c.: 2-8/litter.				B	2				2	2	2	2	2	2			2		2																		
					F	2				2	2	2	2	2	2			2		2																		
					Rs	2				2	2	2	2	2	2			2		2																		
western jumping mouse	r.c.: 2-7/litter, avg. 5; 1-2 litters/year. h.r.: up to 0.8 acres.				B					1	1	1	1	1	1	1	1	1	1		1							1	2									
					F					1	1	1	1	1	1	1	1	1	1	1		1								1	2			2				
					Rs					1	1	1	1	1	1	1	1	1	1	1	1		1								1	2						
Pacific jumping mouse	r.c.: 3-8/litter; 1 litter/year.				B	2				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1	2								
					F	2				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1	2			2			
					Rs	2				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1	2					

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																									
					Dry hillsides						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)													
					Grass-forb		Grass-forb		Shrub		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth		Grass-forb		Shrub		Open sap-pole		Closed sap-pole		Large sawtimber		Old growth	
					1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2				
MAMMALS																																														
creeping vole	MIOR	15	36	B		1	1	1	1	1	2	2	2	1	1	1	2											1	1	1	2	2	2	1	1	1	2	2	2							
				F		1	1	1	1	1	2	2	2	1	1	1	2											1	1	1	2	2	2	1	1	1	2	2	2							
				Rs		1	1	1	1	1	2	2	2	1	1	1	2											1	1	1	2	2	2	1	1	1	2	2	2							
water vole	MIRI	15	10	B																																										
				F																																										
				Rs																																										
Townsend's vole	MITO	15	28	B				2	2	2				2	2	2		2								2						2	2	2												
				F				2	2	2				2	2	2		2								2						2	2	2												
				Rs				2	2	2				2	2	2		2								2						2	2	2												
muskat	ONZI	16	12	B					*	*					*	*																														
				F					*	*				*	*																															
				Rs					*	*				*	*																															
heather vole	PHIN	15	14	B																																										
				F																																										
				Rs																																										
northern bog lemming	SYBO	15	10	B																																										
				F																																										
				Rs																																										
house mouse	MUMU	15	6	B																																										
				F																																										
				Rs																																										
Norway rat	RANO	15	★	B																																										
				F																																										
				Rs																																										
black rat	RARA	5	8	B																																										
				F																																										
				Rs																																										
western jumping mouse	ZAPR	3	18	B														2	2												1	2														
				F																2	2											1	2													
				Rs																	2	2										1	2													
Pacific jumping mouse	ZATR	3	32	B				1	1	2	2	2		1	1	2	2	2	2	2	2	2			1	1	2	2	2																	
				F				1	1	2	2	2		1	1	2	2	2	2	2	2	2	2			1	1	2	2	2																
				Rs				1	1	2	2	2		1	1	2	2	2	2	2	2	2	2			1	1	2	2	2																

B-Breeding, F-Feeding, Rs-Resting, 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																				
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland										
																												Herbaceous wetland	Hardwood and shrubby wetland				Coniferous wetland					
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth													
MAMMALS																																						
creeping vole	B	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2					1	1	1	2	1	1	1	2	2	2	2	2			
	F	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2					1	1	1	2	1	1	1	2	2	2	2	2	2		
	Rs	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	2	2	2					1	1	1	2	1	1	1	2	2	2	2	2	2		
water vole	B	**	*					**	*					**	*												1	1	2				1	2				
	F	**	*					**	*					**	*											1	1	2				1	2					
	Rs	**	*					**	*					**	*											1	1	2				1	2					
Townsend's vole	B	1	1	2				2	2	2				2	2	2											1	1	2			1	2					
	F	1	1	2				2	2	2				2	2	2										1	1	2			1	2						
	Rs	1	1	2				2	2	2				2	2	2										1	1	2			1	2						
muskrat	B	**						**																**		2	2	2	2			2	2	2				
	F	**						**																**		2	2	2	2			2	2	2				
	Rs	**						**																**		2	2	2	2			2	2	2				
heather vole	B							2	2			2	2	1	1			2	2													2	2		2	2		
	F							2	2			2	2	1	1			2	2												2	2		2	2			
	Rs							2	2			2	2	1	1			2	2												2	2		2	2			
northern bog lemming	B													1												1	2			2								
	F													1												1	2			2								
	Rs													1												1	2			2								
house mouse	B																										2	2										
	F																										2	2										
	Rs																											2	2									
Norway rat	B																																					
	F																																					
	Rs																																					
black rat	B	2																						2			2											
	F	2																						2			2											
	Rs	2																						2			2											
western jumping mouse	B							1	2					1	2											1	1	2			1	2						
	F							1	2					1	2										1	1	2			1	2							
	Rs							1	2					1	2										1	1	2			1	2							
Pacific jumping mouse	B	1	1	2	2	2		1	1	2	2	2		1	1	2	2	2						1	1	2	2	1	1	1	2	2	2	2	2	2		
	F	1	1	2	2	2		1	1	2	2	2		1	1	2	2	2						1	1	2	2	1	1	1	2	2	2	2	2			
	Rs	1	1	2	2	2		1	1	2	2	2		1	1	2	2	2						1	1	2	2	1	1	1	2	2	2	2	2			

* Indicates a species has little orientation to plant communities or stand conditions and occurs there only if a special or unique habitat is available. Versatility ratings were not developed for these species.
 ** Species use these plant communities or stand conditions only if a special or unique habitat is available.

Species ^{1/}	Letter code ^{2/}	Life form ^{3/}	Versatility rating ^{3/}	Habitat use ^{4/}	Seasonal occurrence and activity												Comments ^{5/}
					January	February	March	April	May	June	July	August	September	October	November	December	
MAMMALS																	
porcupine	ERDO	6	32	B													Mates Sept.- Jan., births Apr.- June, young weaned by Oct.; W. WA. and W. OR.
				F													
				Rs													
nutria	MYCO	16	10	B													Found in or near water with aquatic vegetation; east side of Puget Sound, S.W. WA. and coast; Coast Ranges and Willamette Valley in Or.; introduced species.
				F													
				Rs													
pika	OCPR	4	5	B													Requires talus or lava flows within forest zones; Cascade Range, W. WA. and W. OR.
				F													
				Rs													
snowshoe hare	LEAM	5	33	B													W. WA. and W. OR., except S.W. OR. and interior valleys.
				F													
				Rs													
black-tailed jack rabbit	LECA	5	10	B													Breeding period unknown in this area; may breed year round in other areas; W. OR.
				F													
				Rs													
European rabbit	ORCU	15	12	B													Primarily inhabits prairie areas in the San Juan Islands, WA.
				F													
				Rs													
brush rabbit	SYBA	5	30	B													Requires dense, brushy edges; W. OR.
				F													
				Rs													
eastern cottontail	SYFL	15	12	B													Inhabits farmland and brushland; lowland and agricultural areas of W. WA. and Willamette Valley in W. OR.
				F													
				Rs													
Nuttall's cottontail	SYNU	15	11	B													Occurs west of Cascade Range only where rabbit brush and ponderosa pine occurs in S.W. OR.
				F													
				Rs													

B-Breeding;
 F-Feeding;
 Rs-Resting;
 See comments and Chapter 3 narrative.

Species ^{1/}	Specific data ^{2/}				Habitat use ^{2/}	Special and unique habitats ^{2/}																										
	Reproductive capacity (r.c.)	Home range (h.r.)	Territory size (t.s.)	Minimum habitat per pair, individual, colony, or population (m.h.)		Coastal		Riparian				Wetlands			Edges					Habitat features												
						Saltwater (ocean)	Estuary	Saltwater beaches	Freshwater beaches	Rivers	Streams and creeks	Sloughs	Springs	Lakes	Ponds	Reservoir	Ponds	Marshes, swamps, bogs	Seeps	Wet meadows	Grass - shrub	Shrub - forest	Grass - forest	Water - grass	Water - shrub	Water - forest	Snags	Logs & down material	Cliffs	Talus	Caves	
MAMMALS																																
porcupine	r.c.: 1/litter. h.r., t.s.: 250-360 acres. m.h.: 6,400 acres.				B					2	2	2		2	2	2		2		2							2	1	1		2	
					F					2	2	2		2	2	2		2		2								1	1		2	
					Rs					2	2	2		2	2	2		2		2							2	1	1		2	
nutria	r.c.: 1-11/litter, avg. 5; 2 litters/year. h.r.: 3,500 feet (diameter).				B		2			1	1	1		2	1	2	1	1		2		2		2								
					F		2			1	1	1		2	1	2	1	1		2			2									
					Rs		2			1	1	1		2	1	2	1	1		2			2									
pika	r.c.: 1-5/litter, avg. 3; 1-2 litters/year. h.r.: 0.6 acre. t.s.: 0.5 acre. m.h.: 10 acres/population.				B																						2		1			
					F																								1			
					Rs																						2		1			
snowshoe hare	r.c.: 1-7/litter, 2-3 litters/year. h.r.: 3-10 acres. m.h.: 160 acres.				B					2	2				2				2	1	2						2					
					F					2	2				2				2	1	2						2					
					Rs					2	2				2				2	1	2						2					
black-tailed jack rabbit	r.c.: 1-8/litter, up to 4 litters/year. h.r.: 45 acres. t.s.: not territorial. m.h.: 160 acres/population.				B															1	2											
					F															1	2											
					Rs															1	2											
European rabbit	r.c.: 5-9 litter, up to 3 litters/year. h.r.: 165 feet of warren. t.s.: defend warren system.				B															2	2	2										
					F															2	2	2										
					Rs															2	2	2										
brush rabbit	r.c.: 1-10/litter, avg. 3; 5 litters/year. h.r.: 105-137 feet (diameter). t.s.: avg. 140 feet (diameter).				B					2	2	2	2	2	2	2				1	2	2										
					F					2	2	2	2	2	2	2				1	2	2										
					Rs					2	2	2	2	2	2	2				1	2	2										
eastern cottontail	r.c.: avg. 5.1/litter, up to 8 litters/year. h.r.: up to 20 acres.				B		2			1	1	1								2	2	2										
					F		2			1	1	1								1	2	2										
					Rs		2			1	1	1								2	2	2										
Nuttall's cottontail	r.c.: 1-8/litter, avg. 5; 4-5 litters/year. h.r.: up to 250 acres.				B					2	2	2	2	2	2	2				1	1						2		1			
					F					2	2	2	2	2	2	2				1	1	1										
					Rs					2	2	2	2	2	2	2				1	1							2		1		

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Letter code ^{2/}	Life form ^{2/}	Versatility rating ^{3/}	Habitat use ^{4/}	Plant communities and stand conditions ^{5/}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					Dry hillsides						Mtn. shrubland and chaparral						Deciduous hardwood						Red alder forest				Evergreen hardwood						Conifer-hardwood forest						Mixed coniferous forest (SW Oregon)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
					1 Grass-forb		1 Grass-forb		2 Shrub		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth		1 Grass-forb		2 Shrub		3 Open sap-pole		4 Closed sap-pole		5 Large sawtimber		6 Old growth																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

B-Breeding; F-Feeding; Rs-Resting; 1 - Primary habitat; 2 - Secondary habitat.

Species ^{1/}	Habitat use ^{2/}	Plant communities and stand conditions ^{3/}																																						
		Temperate coniferous forest						High temperate coniferous forest						Subalpine forest parks						Lodgepole pine (Cascades)				Shorepine (coast)				Riparian/wetland												
																												Herbaceous wetland		Hardwood and shrubby wetland				Coniferous wetland						
		1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth	1 Grass-forb	2 Shrub	3 Open sap-pole	4 Closed sap-pole	5 Large sawtimber	6 Old growth									
MAMMALS																																								
porcupine	B		1	1	1	1	1		2	2	2	2	2							2	2	2		1	1	1			2	2	2	2	2		2	2	2	2	2	
	F	1	1	1	1	2	2	2	2	2	2	2	2							2	2	2	2	1	1	1	1	1		1	1	1	2	2	2	2	2	2		
	Rs		1	1	1	1	1		2	2	2	2	2							2	2	2			1	1	1				2	2	2	2	2	2	2	2	2	
nutria	B	* *																										1	1					1						
	F	2																											1	1					1					
	Rs	* *																											1	1					1					
pika	B							* *					* *					* *																						
	F							1	2					1	2					1	2																			
	Rs							* *					* *					* *																						
snowshoe hare	B		1	2	2	2	2		1	2	2	2	2		2	2	2	2		1	2	2		2						2	2	2	2	2		2	2	2	2	2
	F	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2		1	1	2	2	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2	
	Rs		1	2	2	2	2		1	2	2	2	2		2	2	2	2		1	2	2		2						2	2	2	2	2		2	2	2	2	2
black-tailed jack rabbit	B																																							
	F																																							
	Rs																																							
European rabbit	B	2	2	2																																				
	F	1	1	2																																				
	Rs	2	2	2																																				
brush rabbit	B	2	2	2	2	2	2	2	2	2	2	2	2															2												
	F	1	2	1	2	1	2	1	2	1	2	1	2													2	2						1	2	1	2	1	2		
	Rs	2	2	2	2	2	2	2	2	2	2	2	2														2													
eastern cottontail	B	2																																						
	F	2																																						
	Rs	2																																						
Nuttall's cottontail	B																																							
	F																																							
	Rs																																							

- ^{1/} See appendix 1 for a listing of the scientific names and letter codes of all wildlife species.
- ^{2/} See appendix 7 for life form descriptions.
- ^{3/} Versatility ratings are the sum of the number of plant communities and stand conditions used for breeding plus the number of plant communities and stand conditions used for feeding by a species.
- ^{4/} Habitat use is allocated for breeding, feeding, and resting; value of habitats for these uses is shown as primary or secondary.
- ^{5/} Includes additional information on breeding, specific habitat requirements, abundance, occurrence status, seasonal variations in habitat use; is the only source of distribution information.
- ^{6/} A blank indicates that this information was not found in the literature, or the species does not breed in the region.
- ^{7/} See chapters 4 through 9 for information on special and unique habitats; also appendices 10, 11, 12, 13, 18, 19, and 20.
- ^{8/} See chapter 2 and appendices 5 and 6 for a discussion and complete descriptions of plant communities and their associated stand conditions.

Appendix 9

Major groups of nonsalmonid fishes in western Oregon and Washington

Order Petromyzontiformes

Family Petromyzontidae: This family includes the lampreys, three species of which are found in the area. They include both anadromous and resident species. The two anadromous species, which live as ammocetes in the streams for several years before going to sea, are parasitic as adults. The lampreys are a common native fish throughout Oregon and Washington.

Order Acipenseriformes

Family Acipenseridae: The sturgeons are found in larger rivers of the region. Two species are present, the white sturgeon and green sturgeon. The green sturgeon lives mainly in the ocean, entering the lower portion of larger rivers to spawn. The white sturgeon will enter the ocean, but is mostly to be found in the rivers. Both species are taken in the sport fishery, although the white sturgeon is much more commonly encountered because of its residence in the rivers.

Order Clupeiformes

Family Clupeidae: Two species of introduced shad belonging to this family are found in the area. The American shad is an anadromous species that spawns in the larger rivers along the coast of Oregon and Washington, and supports an active sport and commercial fishery. The threadfin shad was introduced into freshwaters of California as a food resource for game fish; it has now apparently become established in saltwater and has spread northward into Oregon waters.

Order Salmoniformes

Family Salmonidae: (see chapter 10)

Family Osmeridae: The smelts are represented by two anadromous species that enter larger coastal rivers of Washington and Oregon. The smelt spend most of their lives in the ocean, returning to freshwater for only a short time to spawn. They support both a commercial and sport fishery.

Family Umbridae: The only species in the region is the Olympic mudminnow, a sensitive species restricted to the Olympic Peninsula in Washington.

Order Cypriniformes

Family Cyprinidae: Worldwide, the minnows are the most abundant group of freshwater fishes. In the coastal Northwest, they are comparatively under-represented. Of the 13 species and subspecies, three are introduced. The dace, shiner, and squawfish are the most abundant genera. The introduced carp, a highly adaptive species, is widespread in distribution and locally may be abundant. The tench, also introduced, is less abundant and much more restricted in distribution, being found mainly in the Columbia River system. The native species are common elsewhere in the Columbia River system, and are closely allied with the faunas in basins to the east. In the Umpqua River, once connected to the Willamette River but now a separate drainage, divergence is occurring and the dace and squawfish now show sufficient differences to be assigned to distinct species.

Family Catostomidae: The suckers are represented in the northwestern coastal fauna by four species. Only one of these, the largescale sucker, is widely distributed throughout the area. The sucker species, as with the minnows, shows close relationships to faunas in basins to the east and to other locations in the Columbia River Basin.

The cypriniformes are usually found in association with the salmonids and sculpins. Their numbers and distribution have been altered by habitat modifications. In many instances, the modifications of the habitat have favored the cypriniformes over other native species.

Order Siluriformes

Family Ictaluridae: Five species of catfishes have been introduced in the region. Although the distribution and abundance has been limited in cooler waters, they are common in many lowland lakes. No catfishes are native to the region.

Order Percopsiformes

Family Percopsidae: This family, represented by a single species, the sand roller, is limited in distribution and is found in the area of the Columbia River Basin.

Order Gadiformes

Family Gadidae: The Gadidae, or codfishes, are primarily marine fishes of the coast and open oceans. One freshwater species, the burbot, is found in the larger rivers of the Northwest.

Order Atheriniformes

Family Cyprinodontidae: One member of this family, the rainwater killifish, has been introduced into the coastal fauna of western Oregon. It is native to the southwest.

Family Poeciliidae: The mosquitofish, a native of the Southwest, has been introduced into a number of locations. It has been widely used to combat mosquito larvae.

Order Gasterosteiformes

Family Gasterosteidae: The lone representative in the Northwest is the native three-spine stickleback. It can move readily between marine and freshwater, but prefers quiet, inshore areas in the marine environment. It reproduces in freshwater.

Order Perciformes

Family Percichthyidae: The striped bass, the lone representative of the family in freshwater, was introduced into the Pacific Northwest from the East coast. It is an anadromous species that spends most of its life in the ocean, migrating up the larger rivers to spawn. It supports an active sport fishery.

Family Centrarchidae: The sunfish family is not native to the Northwest, but nine species have been introduced. It has become established in all parts of the coastal fauna. The conversion of many streams and rivers to quiet reservoirs has favored the establishment and reproduction of this family. The family supports a limited but active fishery.

Family Percidae: Two species, the yellow perch and walleye, were introduced into the waters of the Northwest. The walleye, a major predator, has recently extended its range and abundance in the Columbia River Basin.

Family Cottidae: The eight species of this family are found throughout the region. These freshwater sculpins are commonly found in the same locations as the salmonids, and occupy much of the same habitat. They are small fishes with large heads, slender bodies and large fins. Although generally widespread and abundant, they are seldom taken or seen by the public.

In addition to the above species, there are a number of marine fishes which will move into freshwater. Some, like the topsmelt, shiner perch, saddleback gunnel, the marine sculpins, and the starry flounder will move a considerable distance into freshwater. There is considerable overlap of the marine and freshwater faunas in the estuaries, with species of both faunas moving back and forth between fresh and saltwater. The true marine fishes, however, reproduce in saltwater even though they may live and feed for extended periods in freshwater.

Appendix 10

Habitat requirements of nonsalmonid fish species

Species	REPRODUCTION						
	Native or Exotic	Salinity/ tolerance	Spawning period	Spawning temperature °Fahrenheit	Preferred substrate	Preferred habitat type	Spawning behavior
River lamprey	N	A	April-July		Gravel	Smaller streams, rivers, flowing water	Buries eggs in redds
Western brook lamprey	N	1	Feb.-July	57	Gravel	Head of riffles, smaller streams and rivers	Buries eggs in redds
Pacific lamprey	N	A	April-July		Rock, gravel	Rivers, in riffles	Digs redd, buries eggs
Green sturgeon	N	A/3B	June-July Probably longer		Gravel, rock	Flowing water, large rivers	Broadcast over bottom, eggs adhesive
White sturgeon	N	3	March-July		Rock, gravel	Flowing water, large rivers	Broadcast over bottom, eggs adhesive
American shad	E	A	June-August	59-63		Flowing water, large rivers	Eggs broadcast, pelagic, nonadhesive
Threadfin shad	E	3	April-July	57-70	Brush, logs other cover; may use open water	Reservoirs, lakes, quiet waters; sheltered area	Spawn in schools; eggs broadcast, adhesive
Longfin smelt	N	A	Jan.-April (landlocked Oct.-Dec.)	39-45	Gravel	Flowing water, coastal streams and rivers	Broadcast eggs over bottom
Eulachon	N	A	Feb.-May		Gravel	Flowing water, coastal streams and rivers	Broadcast eggs over bottom
Olympic mudminnow	N	1	March-June		Silty areas among vegetation	Quiet areas, backwaters, marshes	Eggs adhere to cover; male protects territory
Chiselmouth	N	1	Spring-July	~41	Gravel, rubble	Flowing water, streams and rivers	Eggs broadcast over bottom
Common carp	E	1	Feb.-Sept.	57-68	Rubble, debris, vegetation	Quiet areas, all water types	Random broadcast
Oregon chub ^{3/}	N	1	May-June		Rock, gravel	Flowing water, larger rivers	Eggs broadcast or in nest of rock
Peamouth	N	2	May-July	52-72	Gravel	Quiet waters of streams, lakes	Eggs broadcast on bottom; adhesive
Squawfish <i>Ptychocheilus</i> spp.	N	1	April-July	54-72	Rock, rubble	Flowing water, rivers and streams; lake margins	Eggs broadcast on bottom; adhesive
Dace <i>Rhinichthys</i> spp.	N	1	May-August (June-July)	>55	Rock, rubble	Riffles; small streams to rivers	Spawning site cleaned; eggs put in sheltered area
Shiners <i>Richardsonius</i> spp.	N	1	April-July	>50	Silt, rock, vegetation	Quiet areas of rivers and streams, small tributaries	Eggs broadcast, adhesive
Tench	E	2	May-August		Silt, sand	Quiet areas, around vegetation, lakes, reservoirs, rivers, marshes	Eggs broadcast on bottom among vegetation
Suckers <i>Catostomus</i> spp.	N	1	April-July		Gravel	Riffles, flowing water; streams and rivers	Move upstream as group, broadcast eggs

Species	HABITAT PREFERENCE				
	Preferred water type	Preferred habitat type	Preferred temperature °Fahrenheit	Preferred substrate	Food type
River lamprey	Streams, rivers	Riffles and pools	CW ^{2/}	Silt	Young-organic debris; adult-parasitic
Western brook lamprey	Streams, rivers	Riffles and pools	CW		Organic matter Adult non-feeding
Pacific lamprey	Streams, rivers; adults in ocean	Pools, quiet areas	CW	Silt	Young-organic debris; adult-parasitic
Green sturgeon	Mainly marine, large rivers	Deep water; estuarine and oceanic	CW		Benthos, omnivorous
White sturgeon	Large rivers, estuaries	Deep pools	50-63 (32-75)		Benthos, omnivorous
American shad	Mostly marine, estuarine	Open water			Plankton
Threadfin shad	Reservoirs, lakes quiet areas of larger rivers; estuaries	Pelagic, quiet areas with little or no current	>45		Plankton, organic debris
Longfin smelt	Larger rivers; oceanic		<65		Plankton
Eulachon	Larger rivers; oceanic				Plankton
Olympic mudminnow	Coastal streams, lowland marshy area	Quiet, shallow, protected areas	32-68	Silt	Invertebrates
Chiselmouth	Lakes, rivers, smaller streams				Algae, insects
Common carp	All water types	Quiet areas, eutrophic areas	33-39		Omnivorous
Oregon chub ^{3/}	Mainstream, larger rivers				Bottom flora and fauna
Peamouth	Lakes, rivers, streams, reservoirs	Common around vegetation	<81	Silt, vegetation	Snails, insects, plankton
Squawfish <i>Ptychocheilus</i> spp.	Lakes, slow rivers, streams, reservoirs	Quiet areas, deep pools	68-73 <84		Animal food, some plant food, predatory
Dace <i>Rhinichthys</i> spp.	Lakes, rivers, ponds, streams, reservoirs	Shallow areas, quiet to flowing water	<91	Rock, gravel	Benthic plants and animals
Shiners <i>Richardsonius</i> spp.	Lakes, rivers, ponds, streams, reservoirs	Slow-moving and quiet waters	68-75		Plankton, benthos
Tench	Lakes, ponds, rivers, reservoirs	Quiet waters			Plankton, invertebrates
Suckers <i>Catostomus</i> spp.	Lakes, rivers, streams, reservoirs	Pools, areas of cover	<84	Rock, silt, gravel	Benthic plants and animals

Species	REPRODUCTION						
	Native or Exotic	Salinity ^{1/} tolerance	Spawning period	Spawning temperature °Fahrenheit	Preferred substrate	Preferred habitat type	Spawning behavior
Bullheads <i>Ictalurus</i> spp.	E	1	April-July	70	Mud, sand, around vegetation	Sheltered areas of rivers, lakes, ponds, streams, reservoirs	Both sexes make nest; protected areas; both sexes guard nest
Channel catfish	E	1	April-July	64-75 (59-86)	Around cover	Wide range of conditions and types of water	Male cleans area, makes nest with mucus, guards nest; eggs adhesive
Sand roller	N	1	May-June		Sand, gravel	Shallow areas of streams and rivers, tributaries	Eggs broadcast
Burbot	E	3	Jan.-Feb.		Sand, gravel	Shallow bays, backwaters, streams, lakes, reservoirs	Eggs broadcast; adhesive
Mosquitofish	E	1	April-Sept.			Variety of waters, quiet areas	Perform courtship behavior, fertilization internal, with live births
Threespine stickleback	N	3	March-July	41-68		Quiet water; rivers, streams, reservoirs, lakes, ponds	Male builds nest of plant material and kidney secretions
Striped bass	E	A	April-June	57-70		Flowing water, larger rivers	Mass-spawn in open water, eggs pelagic
Rock bass	E	2	May-June			Quiet areas, lakes, and rivers	Male makes depression for adhesive eggs
Sunfishes <i>Lepomis</i> spp.	E	2	May-August	63-81	Sand, gravel, vegetation	Quiet areas to 12 ft. deep; ponds, lakes, rivers, reservoirs	Male makes depression in substrate; spawn in groups; eggs remain on bottom
Smallmouth bass	E	2	April-July	55-70	Sand, silt	Quiet, sheltered area, to 20 ft. deep; lakes, larger streams, and rivers	Male makes nest, guards territory; eggs remain on bottom
Largemouth bass	E	2	Spring-July	59-75	Sand, gravel, rock	Sheltered areas less than 10 ft. deep; rivers, lakes, streams, ponds, reservoirs	Male makes nest, a depression; eggs remain on bottom
White crappie	E	2	March-July	61-68 (57-73)	Sand, silt, gravel	Sheltered areas near cover; rivers, lakes, streams, ponds, reservoirs	Eggs spawned near protective objects; eggs adhesive
Black crappie	E	2	March-July	61-68 (57-73)	Sand, gravel	Sheltered areas around vegetation; rivers, streams, lakes, ponds, reservoirs	Build nests; spawn in groups; male guards nest, eggs adhesive
Yellow perch	E	2	April-May	46-55	Silt, rock	Quiet areas around vegetation; rivers, lakes, ponds, marshes	Spawn in groups; adhesive eggs adhere to vegetation
Walleye	E	2	March-June	45-55 (39-63)	Silt, sand, rock, gravel	Riffles, flowing water, larger lakes and rivers	Eggs broadcast on bottom
Sculpins <i>Cottus</i> spp.	N	1	Feb.-June	45-59	Rock, gravel near cover	Riffles, small to large streams	Male makes nest, guards nest; eggs adhesive

Species	HABITAT PREFERENCE				
	Preferred water type	Preferred habitat type	Preferred temperature °Fahrenheit	Preferred substrate	Food type
Bullheads <i>Ictalurus</i> spp.	Lakes, ponds, rivers, streams, reservoirs	Quiet waters, sheltered areas	>60	Sand, gravel, silt	Omnivorous
Channel catfish	Lakes, rivers, reservoirs	Slow to swift water	<70	Sand, gravel, rock	Omnivorous
Sand roller	Rivers, streams	Quiet areas		Around cover	Plankton, invertebrates
Burbot	Large rivers, lakes, reservoirs	Deep, flowing waters		Near cover	Invertebrates, piscivorous
Mosquitofish	Lakes, rivers ponds, streams	Quiet waters	39-100		Mosquito larvae, omnivorous
Threespine stickleback	Slow water of streams, rivers, lakes, ponds; move freely into saltwater	Quiet waters	<77		Insects, algae, benthos
Striped bass	Large rivers, oceanic	Open water	65-77		Opportunistic pelagic predators
Rock bass	Clean lakes, streams, and rivers	Flowing water		Rock cover	Animal food
Sunfishes <i>Lepomis</i> spp.	Ponds, lakes, rivers, sluggish streams, reservoirs	Quiet areas	61-91	Silt, sand, gravel	Invertebrates, plankton, animal food
Smallmouth bass	Cool lakes, rivers, large streams	Flowing water	68-81	Gravel, rock	Invertebrates, animal food
Largemouth bass	Ponds, lakes, streams, reservoirs	Clean, flowing water	81	Silt, sand, organic matter	Invertebrates, animal food
White crappie	Ponds, lakes, streams, rivers, reservoirs	Quiet areas	41-95	Silt, rock	Plankton, animal food
Black crappie	Ponds, lakes, streams, rivers, reservoirs	Clear, quiet areas	41-95	Silt, rock, vegetation	Plankton, animal food
Yellow perch	Ponds, lakes, rivers, marshes reservoirs	Quiet backwater areas	Wide range	Silt	Invertebrates, animal food, some plant material
Walleye	Larger lakes and rivers	Clean, deeper water	65-77	Silt, rock	Piscivorous
Sculpins <i>Cottus</i> spp.	Streams and rivers; some in lakes and reservoirs	Flowing water	50-64 (45-75)	Rock, gravel	Benthic organisms

^{1/} A = Anadromous
 B = Marine
 1 = Freshwater only
 2 = Limited salinity tolerance
 3 = Considerable salinity tolerance

^{2/} CW = Cold water

^{3/} Based in part on related species

References used: Armantrout 1979, Bond 1974, Carlander 1969 and 1977, Eddy 1969, Hart 1973, Moyle 1976, Scott and Crossman 1973, Simpson and Wallace 1978, Wydoski and Whitney 1979.

Appendix 11

Life history information and habitat associations for selected vertebrate species using estuarine habitats

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used				
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine	
				OR	WA																	
				AMPHIBIANS																		
roughskin newt	TAGR	2	2,6	U	U	1						*										X
				CR	CR	2																
ensatina	ENES	5	6	U	U	1	*					*	*		*					X	X	X
				CR	CR	2																
Pacific treefrog	HYRE	2	6	U	U	1	*	*	*	*	*									X	X	X
				CR	CR	2																
red-legged frog	RAAU	2	6	U	U	1		*	*	*	*								X	X	X	X
				CR	CR	2																
REPTILES																						
common garter snake	THSI	3	6	U	U	1						*	*	*					X	X	X	X
				CR	CR	2																
northwestern garter snake	THOR	5	6	U	U	1					*	*	*					X	X	X	X	
				CR	CR	2																
BIRDS																						
common loon	GAIM	3	2	U	U	1					*	*	*	*	*			X	X	X		
				CW	CW	2																
pied-billed grebe	POPO	3	6	U	U	1				*	*	*	*	*	*				X	X	X	
				UW	CW	2																
horned grebe	POAU	3	6	U	U	1				*	*	*	*	*				X	X	X		
				CW	CW	2																
red-necked grebe	PODGR	3	2,6	U	U	1				*	*	*						X	X	X		
				UW	CW	2																
eared grebe	PODNI	3	6	U	U	1				*	*	*	*	*	*			X	X	X		
				UW	UW	2																
western grebe	AEOC	3	6	U	U	1				*	*	*	*	*	*			X	X	X		
				CW	CW	2																
double-crested cormorant	PHAU	3	2	U	U	1				*	*	*	*	*				X	X	X	X	
				CR	CR	2																
American bittern	BOLE	3	2	U	U	1				*	*	*	*	*						X	X	
				UR	UR	2																
great blue heron	ARHE	12	6	D	D	1				*	*	*	*	*	*			X	X	X	X	
				CR	CR	2																
great egret	CASAL	7	6	U	U	1				*	*	*	*	*					X	X	X	
				UM	UM	2																

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary
 1 Reproductive activity – Adults or adults and juveniles
 2 Seasonal occurrence – Adults or adults and juveniles
 2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}												
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals	
		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder												Bedrock
AMPHIBIANS																									
roughskin newt															●										
ensatina															●										
Pacific treefrog								▲							●										
red-legged frog								▲							●										
								▲							▲										
REPTILES																									
common garter snake															●										
northwestern garter snake															▲										
															●										
															▲										
BIRDS																									
common loon	●		●	●	●				●	●	●	●													
	▲																								
pied-billed grebe	●	●		●	●	●	●		●	●	●	●													
	▲																								
horned grebe	●	●		●	●	●			●	●	●	●													
	▲																								
red-necked grebe	●	●		●	●	●	●		●	●	●	●													
	▲																								
eared grebe	●	●		●	●	●			●	●	●	●													
	▲																								
western grebe	●	●		●	●	●			●	●	●	●													
	▲																								
double-crested cormorant	●	●		●	●	●			●	●	●	●													
	▲																								
American bittern	●								●	●	●	●	●	●	●										
great blue heron	●								●	●	●	●	●	●	●										
									▲	▲	▲	▲	▲	▲	▲										
great egret	●								●	●	●	●	●	●	●										
									▲	▲	▲	▲	▲	▲	▲										

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
green-backed heron	BUST	7	6	U	U	1			*	*	*	*	*	*					X	X	X
				UR	UR	2													X	X	X
black-crowned night-heron	NYNY	7	2	U	U	1			*	*	*	*	*	*					X	X	X
				RR	RR	2															
tundra swan	CYCO	3	2	U	U	1													X	X	X
				UW	CW	2													X	X	X
trumpeter swan	CYBU	3	1,2	U	U	1													X	X	X
				RM	RM	2													X	X	X
greater white-fronted goose	ANAL	3	2,4	U	U	1													X	X	X
				RM	UM	2													X	X	X
snow goose	CHCA	3	2,4	U	U	1													X	X	X
				RM	UM	2													X	X	X
brant	BRBE	3	2,4	D	D	1												X	X	X	
				CW	CW	2													X	X	X
Canada goose	BRCA	3	2,4	U	U	1		*	*	*	*	*							X	X	X
				RM	CR	2													X	X	X
wood duck	AISP	14	2,4,6	U	U	1			*	*	*	*								X	X
				UR	UR	2														X	X
green-winged teal	ANCR	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				CW	CW	2													X	X	X
mallard	ANPL	3	2,4	U	U	1													X	X	X
				CR	CR	2													X	X	X
northern pintail	ANAC	3	2,4	U	U	1			*	*	*	*	*	*					X	X	X
				CW	CW	2													X	X	X
blue-winged teal	ANDI	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				RW	UM	2													X	X	X
cinnamon teal	ANCY	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				UM	RM	2													X	X	X
northern shoveler	ANCL	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				UW	CW	2													X	X	X
gadwall	ANST	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				UW	CW	2													X	X	X
Eurasian wigeon	ANPE	3	2,4	U	U	1													X	X	X
				RM	CM	2													X	X	X
American wigeon	ANAAM	3	2,4	U	U	1			*	*	*	*							X	X	X
				CW	CW	2													X	X	X
canvasback	AYVA	3	2,4	U	U	1			*	*									X	X	X
				CW	CW	2													X	X	X
redhead	AYAM	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				RM	UW	2													X	X	X
ring-necked duck	AYCO	3	2,4	U	U	1			*	*	*	*	*							X	X
				UM	UM	2														X	X
greater scaup	AYMA	3	2,4	U	U	1												X	X	X	X
				CW	CW	2													X	X	X
lesser scaup	AYAF	3	2,4	U	U	1			*	*	*	*						X	X	X	X
				CW	UM	2													X	X	X

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary
1 Reproductive activity – Adults or adults and juveniles
2 Seasonal occurrence – Adults or adults and juveniles
2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}													Food organisms used ^{7/}													
	Water column	Subtidal substrates							Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals		
		Mud	Sand /mud	Sand	Cobble /gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble /gravel	Boulder	Bedrock												Vegetation	
green-backed heron	● ▲								● ▲		● ▲	● ▲	● ▲	● ▲	● ▲												
black-crowned night-heron	● ▲									● ▲		● ▲	● ▲	● ▲	● ▲												
tundra swan	● ▲									● ▲					● ▲												
trumpeter swan	● ▲														● ▲												
greater white-fronted goose	● ▲									● ▲					● ▲												
snow goose	● ▲								● ▲						● ▲												
brant	● ▲						● ▲		● ▲						● ▲												
Canada goose	● ▲									● ▲					● ▲												
wood duck	● ▲									● ▲		● ▲			● ▲												
green-winged teal	● ▲									● ▲		● ▲			● ▲												
mallard	● ▲									● ▲					■ ▲												
northern pintail	● ▲									● ▲		● ▲			● ▲												
blue-winged teal	● ▲									● ▲					● ▲												
cinnamon teal	● ▲									● ▲					● ▲												
northern shoveler	● ▲									● ▲		● ▲			● ▲												
gadwall	● ▲									● ▲					● ▲												
Eurasian wigeon	● ▲									● ▲					● ▲												
American wigeon	● ▲														● ▲												
canvasback	● ▲						● ▲		● ▲						● ▲												
redhead	● ▲									● ▲		● ▲			● ▲												
ring-necked duck	● ▲							● ▲							● ▲												
greated scaup	● ▲						● ▲		● ▲		● ▲		● ▲		● ▲												
lesser scaup	● ▲						● ▲		● ▲		● ▲		● ▲		● ▲												

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
harlequin duck	HIHI	3	2	U	U	1				*	*	*	*					X	X		
				UR	UM	2															
oldsquaw	CLHY/	3	2,4	U	U	1													X	X	
				UW	CW	2															
common goldeneye	BUCL	14	2,4	U	U	1													X	X	X
				CW	CW	2															
Barrow's goldeneye	BUIS	14	2,4	U	U	1				*	*	*	*						X	X	X
				RM	UW	2															
bufflehead	BUAL	14	2,4	U	U	1			*	*	*	*							X	X	X
				CW	CW	2															
hooded merganser	LOCUC	14	2,4,6	U	U	1		*	*	*	*									X	X
				UW	UW	2															
common merganser	MERME	14	6	U	U	1			*	*	*	*	*							X	X
				UW	CW	2															
ruddy duck	OXJA	3	2,4	U	U	1			*	*	*	*	*						X	X	X
				CW	UW	2															
osprey	PAHA	12	2,6	U	U	1		*	*	*	*	*	*					X	X	X	X
				US	US	2															
bald eagle	HALE	12	1,2,6	D	D	1	*	*	*	*	*	*	*					X	X	X	X
				UR	UR	2															
northern harrier	CICY	5	2	U	U	1		*	*	*	*	*	*	*					X	X	X
				UR	UR	2															
red-tailed hawk	BUJA	12	2	U	U	1	*	*	*	*	*	*	*						X	X	X
				UR	UR	2															
merlin	FACO	11	2	U	U	1				*	*							X	X	X	X
				UW	UW	2															
peregrine falcon	FAPE	4	1,2	U	U	1		*	*	*	*	*	*					X	X	X	X
				RR	RR	2															
gyrfalcon	FARU	4	1,2	U	U	1												X	X	X	X
				RW	RW	2															
Virginia rail	RALI	3	2	D	D	1													X	X	X
				UR	UR	2															
sora	PORCA	3	2	U	U	1												X	X	X	X
				US	CS	2															
American coot	FUAM	3	2,4	D	D	1			*	*	*	*	*					X	X	X	X
				CW	UW	2															
black-bellied plover	PLSQ	5	2	U	U	1												X	X	X	X
				CW	CW	2															
lesser golden plover	PLDO	5	2	U	U	1												X	X	X	X
				RM	RM	2															
snowy plover	CHAL	3	2	U	U	1			*	*								X	X		
				UR	US	2															
semipalmated plover	CHSE	3	2	U	U	1				*	*	*						X	X	X	X
				CM	CM	2															
killdeer	CHVO	3	2	U	U	1												X	X	X	X
				CR	CR	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary

- 1 Reproductive activity – Adults or adults and juveniles

- 2 Seasonal occurrence – Adults or adults and juveniles

- 2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}														Food organisms used ^{7/}											
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals		
		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder												Bedrock	Vegetation
harlequin duck	● ▲				●	●	●					●	▲													
oldsquaw	● ▲				●	●	●			●		●		●	●	▲										
common goldeneye	● ▲								●		●		●		●	▲										
Barrow's goldeneye	● ▲								●			●		●	▲											
bufflehead	● ▲								●			●			●	▲										
hooded merganser	● ▲				●					●		●			●	▲										
common merganser	● ▲				●					●		●			●	▲										
ruddy duck	● ▲		●		●		●			●		●			●	▲										
osprey	●														●											
bald eagle	●														●											
northern harrier															● ▲											
red-tailed hawk															●											
merlin															● ▲											
peregrine falcon	●										●				●											
gyrfalcon	●										●				●											
Virginia rail									●						■ ● ▲											
sora									●						■ ● ▲											
American coot	● ▲								● ▲						●											
black-bellied plover										● ▲					● ▲											
lesser golden plover										● ▲					● ▲											
snowy plover											● ▲				● ▲											
semipalmated plover										● ▲	● ▲															
killdeer										● ▲	● ▲	● ▲			■ ● ▲											

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
greater yellowlegs	TRME	3	2	U	U	1													X	X	X
				CW	CW	2															
lesser yellowlegs	TRFL	3	2	U	U	1													X	X	X
				UM	CM	2															
solitary sandpiper	TRSO	7	2	U	U	1														X	X
				RM	RM	2															
willet	CASE	3	2	U	U	1			*	*	*	*						X	X	X	X
				UM	UM	2															
wandering tattler	HEIN	3	2	U	U	1												X	X		
				UM	UM	2															
spotted sandpiper	ACMA	3	2	U	U	1				*	*	*	*						X	X	X
				UR	UM	2															
whimbrel	NUPH	5	2	U	U	1												X	X	X	X
				UW	CW	2															
long-billed curlew	NUAM	3	2	U	U	1												X	X	X	X
				RM	RM	2															
marbled godwit	LIFE	5	2	U	U	1												X	X		
				UM	UM	2															
ruddy turnstone	AREIN	5	2	U	U	1												X	X	X	
				UW	UM	2															
black turnstone	ARME	3	2	U	U	1												X	X		
				CW	CW	2															
surfbird	APVI	5	2	U	U	1												X	X		
				CW	UM	2															
red knot	CACANU	5	2	U	U	1												X	X	X	
				RM	RM	2															
sanderling	CALAL	3	2	U	U	1												X	X		X
				CW	CW	2															
semipalmated sandpiper	CALPU	3	2	U	U	1												X	X	X	X
				RM	RM	2															
western sandpiper	CAMAU	3	2	D	D	1												X	X	X	X
				CM	CM	2															
least sandpiper	CAMI	3	2	D	D	1												X	X	X	X
				CM	CM	2															
Baird's sandpiper	CABA	5	2	U	U	1												X	X	X	X
				UM	UM	2															
pectoral sandpiper	CAMEL	5	2	U	U	1													X	X	
				UM	UM	2															
sharp-tailed sandpiper	CAAC	3	2	U	U	1												X	X	X	X
				RM	RM	2															
rock sandpiper	CAPT	3	2	U	U	1												X	X		
				UM	UM	2															
dunlin	CAALP	3	2	D	D	1												X	X	X	
				CM	CM	2															
stilt sandpiper	CAHI	3	2	U	U	1													X	X	X
				RM	RM	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
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^{5/} Reproduction and occurrence

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Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}												
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals	
		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder												Bedrock
greater yellowlegs								●		●				●											
lesser yellowlegs								●		●				●											
solitary sandpiper								●		●															
willet								●		●				●											
wandering tattler											●	●	●												
spotted sandpiper								●		●				●											
whimbrel										●				●											
long-billed curlew								●		●															
marbled godwit								●		●				●											
ruddy turnstone										●	●	●		●											
black turnstone										●	●	●		●											
surfbird											●	●	●												
red knot								●		●	●	●	●	●											
sanderling									●	●				▲											
semipalmated sandpiper								●		●															
western sandpiper								●						▲											
least sandpiper								●		●	●			●											
Baird's sandpiper								●		●				●											
pectoral sandpiper								●						●											
sharp-tailed sandpiper											●	●	●												
rock sandpiper											●	●	●												
dunlin								●		●				▲											
stilt sandpiper								●		●				▲											

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

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Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
buff-breasted sandpiper	TRSU	3	2	U	U	1													X	X	X
				RM	RM	2															
short-billed dowitcher	LIGR	3	2	U	U	1												X	X	X	
				UM	UM	2															
long-billed dowitcher	LISC	3	2	D	D	1												X	X	X	X
				UW	CW	2															
common snipe	GAGA	3	4	U	U	1														X	X
				UW	CW	2															
Wilson's phalarope	PHTR	3	2	U	U	1												X	X	X	X
				RM	UM	2															
red-necked phalarope	PHLO	3	2	U	U	1												X	X		
				CM	UM	2															
red phalarope	PHALFU	3	2	U	U	1												X	X		
				CM	RM	2															
Franklin's gull	LAPI	3	2	U	U	1												X	X	X	X
				RM	RM	2															
Bonaparte's gull	LAPH	3	2	U	U	1												X	X	X	
				CM	CM	2															
Heermann's gull	LAHE	3	2	U	U	1												X	X		X
				CM	CM	2															
mew gull	LARCAN	3	2	U	U	1												X	X	X	X
				CW	CW	2															
ring-billed gull	LADE	3	2	U	U	1			*	*	*	*	*					X	X	X	X
				CM	CM	2															
California gull	LACAL	3	2	U	U	1												X	X	X	X
				CM	CM	2															
herring gull	LAAR	3	2	U	U	1												X	X	X	X
				UW	CW	2															
Thayer's gull	LATH	3	2	U	U	1												X	X	X	X
				UW	UW	2															
western gull	LAOC	3	2	U	U	1												X	X	X	X
				CR	CR	2															
glaucous-winged gull	LAGL	3	2	U	U	1		*	*	*	*	*	*	*				X	X	X	X
				CR	CR	2															
glaucous gull	LAHY	3	2	U	U	1												X	X		X
				RW	RW	2															
black-legged kittiwake	RITR	3	2	U	U	1												X	X		
				UM	CM	2															
Sabine's gull	XESA	3	2	U	U	1												X	X	X	
				RM	RM	2															
Caspian tern	STERCA	3	2	U	U	1												X	X	X	X
				US	US	2															
common tern	STHI	3	2	U	U	1												X	X		
				UM	UM	2															
Arctic tern	STPA	3	2	U	U	1												X	X		
				UM	UM	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

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U – Uses

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		Mud	Sand /mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble/gravel	Boulder											
buff-breasted sandpiper										●				●										
short-billed dowitcher								●						●										
long-billed dowitcher								●		●				●										
common snipe								●		●				●	■									
Wilson's phalarope	●							●		●				■										
red-necked phalarope	●							●		●														
red phalarope	●									●			●											
Franklin's gull	●																							
Bonaparte's gull	●							●		●	●	●	●	●										
Heermann's gull	●							●		●	●	●	●	●										
mew gull	●							●		●	●	●	●	●										
ring-billed gull	●							●		●	●	●	●	●										
California gull	●							●		●	●	●	●	●										
herring gull	●							●		●	●	●	●	●										
Thayer's gull	●							●		●	●	●	●	●										
western gull	●							●		●	●	●	●	●	■									
glaucous-winged gull	●							●		●	●	●	●	●										
glaucous gull	●							●		●	●	●	●	●										
black-legged kittiwake	●																							
Sabine's gull	●							●																
Caspian tern	●									●				●	■									
common tern	●							●		●	●	●	●											
Arctic tern	●									●	●													

^{6/} Use codes

- - Breeding
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- ▲ - Resting

^{7/} Food organisms used by:

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Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
Forster's tern	STFO	3	6	U	U	1												X	X	X	X
				RS	RS	2															
black tern	CHNI	3	2	U	U	1				*	*	*	*					X	X	X	X
				RM	RM	2															
marbled murrelet	BRMA	12	2	U	U	1			*	*	*	*	*					X	X		
				UR	UR	2															
rock dove	COLI	4	2	U	U	1		*	*	*	*	*	*	*				X	X	X	X
				CR	CR	2															
band-tailed pigeon	COFA	11	2	U	U	1			*	*	*	*	*							X	X
				CS	CS	2															
western screech-owl	OTKE	14	2	U	U	1		*	*	*	*								X	X	X
				CR	CR	2															
burrowing owl	ATCU	15	2	U	U	1		*	*	*	*	*								X	X
				UW	UW	2															
short-eared owl	ASFL	5	2	U	U	1												X	X	X	X
				UR	UR	2															
common nighthawk	CHMI	6	2	U	U	1				*	*	*							X	X	X
				CS	CS	2															
black swift	CYNI	4	2	U	U	1				*	*	*	*						X	X	X
				RM	UR	2															
belted kingfisher	CEAL	16	2	U	U	1			*	*	*	*	*					X	X	X	X
				CR	CR	2															
ash-throated flycatcher	MYCI	14	2	U	U	1			*	*	*	*								X	X
				US	RS	2															
horned lark	ERAL	5	2	U	U	1		*	*	*	*	*								X	X
				CR	CR	2															
purple martin	PRSU	14	2	U	U	1			*	*	*	*	*							X	X
				US	US	2															
tree swallow	TABI	14	2	U	U	1			*	*	*								X	X	X
				CS	CS	2															
violet-green swallow	TATH	14	2	U	U	1				*	*	*	*						X	X	X
				CS	CS	2															
bank swallow	RIRI	16	2	U	U	1				*	*	*							X	X	X
				US	US	2															
cliff swallow	HIPY	4	2	U	U	1			*	*	*	*							X	X	X
				CS	CS	2															
barn swallow	HIRU	4	2	U	U	1			*	*	*	*	*						X	X	X
				CS	CS	2															
black-billed magpie	PIPI	7	2	U	U	1			*	*	*	*							X	X	X
				RM	UR	2															
American crow	COBR	11	2	U	U	1			*	*	*	*						X	X	X	X
				CR	CR	2															
common raven	CORCO	4	2	U	U	1			*	*	*	*							X	X	X
				CR	CR	2															
marsh wren	CIPA	8	2	U	U	1														X	X
				CR	CR	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses




^{3/} Abundance codes

- C – Common
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^{4/} Status codes

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^{5/} Reproduction and occurrence

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		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder												Bedrock
Forster's tern	●							●	▲	●	▲														
black tern	● ▲							●	▲	●	▲				●										
marbled murrelet	● ▲	●		●	●	●	●																		
rock dove										●	●				●										
band-tailed pigeon														●	▲										
western screech-owl	●														●										
burrowing owl															●	▲									
short-eared owl														●	● ■ ▲										
common nighthawk															● ▲										
black swift															●										
belted kingfisher	●							●		●	●	●	●	●	● ▲										
ash-throated flycatcher															●										
horned lark										●	●				●										
purple martin	●									●															
tree swallow															●										
violet-green swallow															●										
bank swallow															●										
cliff swallow															●										
barn swallow															●										
black-billed magpie															●										
American crow															●										
common raven															●										
marsh wren															■ ● ▲										

^{5/} Use codes

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- ▲ - Resting

^{7/} Food organisms used by:

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Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
water pipit	ANSP	5	2	U	U	1					*	*	*					X	X	X	X
				CR	CR	2															
European starling	STVU	14	2	U	U	1		*	*	*	*	*	*						X	X	X
				CR	CR	2															
Townsend's warbler	DETO	10	2	U	U	1					*	*								X	X
				UM	UM	2															
Savannah sparrow	PASA	5	2	U	U	1												X	X	X	X
				CR	CR	2															
song sparrow	MELME	7	2	U	U	1												X	X	X	X
				CR	CR	2															
red-winged blackbird	AGPH	7	2	U	U	1													X	X	X
				CR	CR	2															

MAMMALS

Pacific water shrew	SOBE	16	5,6	U	U	1		*	*						*	*			X	X	X
				CR	CR	2															
Trowbridge's shrew	SOTRO	15	5,6	U	U	1		*	*						*	*			X	X	X
				CR	CR	2															
vagrant shrew	SOVA	15	5,6	U	U	1		*	*						*	*			X	X	X
				CR	CR	2															
raccoon	PRLO	14	4,6	U	U	1	*	*										X	X	X	X
				CR	CR	2															
river otter	LUCA	16	2,3,6	U	U	1	*	*	*	*						*				X	X
				CR	CR	2															
ermine	MUER	15	3,6	U	U	1					*	*	*						X	X	X
				CR	CR	2															
long-tailed weasel	MUFR	15	3,6	U	U	1					*	*	*						X	X	X
				CR	CR	2															
mink	MUVI	14	3,6	U	U	1	*	*	*										X	X	X
				CR	CR	2															
harbor seal	PHVI	3	2	D	D	1												X	X	X	X
				CR	CR	2															
beaver	CASCAN	16	2,6	U	U	1	*	*											X	X	X
				CR	CR	2															
deer mouse	PEMA	15	5,6	U	U	1	*	*	*	*	*	*	*	*	*	*	*	X	X	X	X
				CR	CR	2															
western red-backed vole	CLCA	15	5,6	U	U	1		*	*	*	*	*	*	*	*	*			X	X	X
				CR	CR	2															
creeping vole	MIOR	15	5,6	U	U	1		*	*	*	*	*	*	*	*	*			X	X	X
				CR	CR	2															
Townsend's vole	MITO	15	5,6	U	U	1		*	*	*	*	*	*	*	*	*			X	X	X
				CR	CR	2															
muskrat	ONZI	16	3,5,6	U	U	1	*	*	*	*	*	*	*	*	*	*	*		X	X	X
				CR	CR	2															
black rat	RARA	5	5,6	U	U	1	*	*	*	*	*	*	*	*	*	*	*	X	X	X	X
				CR	CR	2															

^{1/} Justification for consideration

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^{2/} Use codes

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
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- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary
 1 Reproductive activity – Adults or adults and juveniles
 2 Seasonal occurrence – Adults or adults and juveniles
 2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}											
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
		Mud	Sand /mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble/gravel	Boulder											
water pipit								●	●					● ▲										
European starling														●										
Townsend's warbler														● ▲										
Savannah sparrow														■ ● ▲										
song sparrow														■ ●										
red-winged blackbird														■ ● ▲										
MAMMALS																								
Pacific water shrew														■ ▲										
Trowbridge's shrew														■ ● ▲										
vagrant shrew														■ ● ▲										
raccoon								●	●	●	●	●	●	● ▲										
river otter	● ▲													● ▲										
ermine									●	●	●	●	●	● ▲										
long-tailed weasel									●	●	●	●	●	● ▲										
mink									●	●	●	●	●	● ▲										
harbor seal	■ ● ▲								▲	▲	▲	▲	▲											
beaver														● ▲										
deer mouse														■ ● ▲										
western red-backed vole														● ▲										
creeping vole														■ ● ▲										
Townsend's vole														■ ● ▲										
muskrat														■ ● ▲										
black rat														■ ● ▲										

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
Pacific jumping mouse	ZATR	3	5,6	U	U	1		*	*	*	*	*	*	*	*	*			X	X	X
				CR	CR	2															
FISH																					
river lamprey	LAAY	1-E	6	D	D	1		*	*	*	*							X	X	X	X
				CM	CM	2															
Pacific lamprey	LATR	1-E	6	U	U	1		*	*	*	*							X	X	X	X
				CM	CM	2															
spiny dogfish	SQAC	1-A	3,4	U	U	1												X	X		
				CR	CR	2															
green sturgeon	ACME	1-G	2,3,4	D	D	1												X	X		X
				CM	CM	2															
white sturgeon	ACTR	1-G	2,3,4,6	U	U	1		*	*	*	*	*						X	X	X	X
				CR	CR	2															
American shad	ALSA	1-A	2,3,4,5,6	U	U	1		*	*	*	*	*	*	*	*	*		X	X	X	X
				CM	CM	2															
Pacific herring	CLHA	1-E	2,3,4,5,6	D	D	1												X	X	X	
				CM	CM	2															
pink salmon	ONGO	1-E	2,3,4,6	D	D	1						*	*	*	*	*		X	X	X	X
				CM	CM	2															
chum salmon	ONKE	1-E	2,3,6	D	D	1								*	*	*		X	X	X	X
				CM	CM	2															
coho salmon	ONKI	1-E	2,3,4,6	D	D	1	*							*	*	*	*	X	X	X	X
				CM	CM	2															
sockeye salmon	ONNE	1-E	2,3,6	D	D	1					*	*	*					X	X	X	X
				CM	CM	2															
chinook salmon	ONTS	1-E	2,3,4,6	D	D	1						*	*	*	*	*	*	X	X	X	X
				CM	CM	2															
cutthroat trout	SACL	1-E	2,4,6	D	D	1	*	*	*	*	*				*	*	*	X	X	X	X
				CM	CM	2															
rainbow trout (steelhead)	SAGA	1-E	2,3,4,6	D	D	1	*	*	*	*	*							X	X	X	X
				CM	CM	2															
Dolly Varden	SAMA	1-E	2,4,6	D	D	1								*	*	*		X	X	X	X
				RM	CM	2															
whitebait smelt	ALEL	1-E	5,6	U	U	1				*	*	*						X	X		X
				CR	CR	2															
surf smelt	HYPR	1-E	3,4,5,6	U	U	1												X	X		
				CR	CR	2															
longfin smelt	SPTA	1-E	5,6	D	D	1												X	X	X	X
				CS	CS	2															
eulachon	THPAC	1-E	2,3,4,5,6	D	D	1	*	*	*	*	*							X	X	X	X
				CS	CS	2															
speckled dace	RHOS	1-E	5,6	U	U	1				*	*	*	*						X		X
				UR	UR	2															
redside shiner	RIBA	1-E	5,6	U	U	1			*	*	*	*							X		X
				UR	UR	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses




^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary
 1 Reproductive activity – Adults or adults and juveniles
 2 Seasonal occurrence – Adults or adults and juveniles
 2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}													Food organisms used ^{7/}														
	Water column	Subtidal substrates							Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals			
		Mud	Sand /mud	Sand	Cobble /gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble /gravel	Boulder	Bedrock												Vegetation		
Pacific jumping mouse															■ ● ▲													
FISH																												
river lamprey	● ▲	●	●																									
Pacific lamprey	● ▲																											
spiny dogfish	■ ● ▲		●	●	●																							
green sturgeon			● ▲	● ▲	● ▲																							
white sturgeon			● ▲	● ▲	● ▲																							
American shad	● ▲		●	●																								
Pacific herring	● ▲		●	●	●	■		■				■	■		■													
pink salmon	● ▲		●	●	●																							
chum salmon	● ▲		●	●	●																							
coho salmon	● ▲		●	●	●																							
sockeye salmon	● ▲		●	●	●																							
chinook salmon	● ▲		●	●	●																							
cutthroat trout	● ▲				●																							
rainbow trout (steelhead)	● ▲				●																							
Dolly Varden	● ▲				●																							
whitebait smelt	● ▲				●																							
surf smelt	● ▲			●							●																	
longfin smelt	● ▲			●							●																	
eulachon	● ▲			●	●																							
speckled dace	● ▲			●	●																							
redside shiner	● ▲			●	●																							

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 - Juveniles
- 2 - Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
largescale sucker	CATMA	1-G	6	U	U	1			*	*	*										X
				UM	UM	2															
tube-snout	AUFL	1-E	5	D	D	1												X	X		
				CR	CR	2															
threespine stickleback	GAAC	1-E	5,6	U	U	1												X	X	X	X
				CR	CR	2															
bay pipefish	SYLE	1-C	5,6	D	D	1												X	X	X	
				CR	CR	2															
striped bass	MOSA	1-A	2,3,4,6	D	D	1												X	X		X
				CM	CM	2															
yellow perch	PEFL	1-E	2,4,5,6	U	U	1			*	*	*	*									X
				UM	UM	2															
walleye	STVI	1-E	4,5,6	U	U	1			*	*	*	*									X
				UM	UM	2															
redtail surfperch	AMRH	1-C	2,4	U	U	1			*	*	*	*						X	X		
				CR	CR	2															
shiner perch	CYAG	1-C	4,5	D	D	1												X	X	X	X
				CR	CR	2															
striped seaperch	EMLA	1-C	2,4,6	U	U	1												X	X	X	
				CR	CR	2															
walleye surfperch	HYAR	1-C	2,4	U	U	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															
white seaperch	PHFU	1-C	2,4	U	U	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															
pile perch	RHVA	1-C	2,4,6	D	D	1												X	X		
				CR	CR	2															
saddleback gunnel	PHOR	1-G	5,6	D	D	1												X	X	X	
				CR	CR	2															
black rockfish	SEME	1-C	3,4	U	U	1	*											X	X		
				CS	CS	2															
coastrange sculpin	COAL	1-G	6	U	U	1													X		X
				UW	UW	2															
prickly sculpin	COAS	1-G	5,6	D	D	1												X	X		X
				CM	CM	2															
buffalo sculpin	ENBI	1-G	6	D	D	1												X	X		
				CR	CR	2															
Pacific staghorn sculpin	LEAR	1-G	6	D	D	1												X	X	X	X
				CR	CR	2															
Pacific sanddab	CISO	1-C	3,6	U	U	1					*	*	*					X	X		
				CR	CR	2															
speckled dandab	CIST	1-C	3,4,6	U	U	1			*	*	*	*	*					X	X		
				CR	CR	2															
English sole	PAVE	1-C	3,4,6	D	D	1	*	*	*	*	*	*	*	*	*	*	*	X	X		
				CR	CR	2															
starry flounder	PLST	1-C	3,4,6	D	D	1	*	*	*	*	*	*	*	*	*	*	*	X	X	X	X
				CR	CR	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
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^{5/} Reproduction and occurrence

- * 1 Reproduces in western Oregon and Washington but outside the estuary
 ■ 1 Reproductive activity – Adults or adults and juveniles
 ■ 2 Seasonal occurrence – Adults or adults and juveniles
 ■ 2 Seasonal occurrence – Juveniles only

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}												
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals	
		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder												Bedrock
largescale sucker	● ▲			●	●											■		■							
tube-snout	● ▲							■										■							
threespine stickleback	● ▲		●		■			■		●		■			■										
bay pipefish	■ ● ▲		●		●			●		●					●										
striped bass	■ ● ▲		●		●					●		●						■							
yellow perch	● ▲					●																			
walleye	● ▲				●		●	●				●			●										
redtail surfperch	▲					●	●						●	●											
shiner perch	■ ▲	●	●	●		●	●	●	●	●	●		●	●	●										
striped seaperch	■ ● ▲					●	●	●					●	●	●										
walleye surfperch	■ ● ▲																								
white seaperch	■ ● ▲																								
pile perch	■ ▲					●	●						●	●											
saddleback gunnel			●			■	■	●		●			■	■	●										
black rockfish	●	▲	▲	▲	●		●	●				●			●										
coastrange sculpin	●				■	●	●	●				■	●	●	●										
prickly sculpin	●		● ▲		■			●		▲		■			●										
buffalo sculpin	●		● ▲	● ▲	● ▲	■ ▲	■ ▲	■ ●		● ▲	● ▲	● ▲	■ ▲	■ ▲	■ ●										
Pacific staghorn sculpin	●		● ▲	● ▲	● ▲	■ ▲	■ ▲	■ ●		● ▲	● ▲	● ▲	■ ▲	■ ▲	■ ●										
Pacific sanddab	●		● ▲	● ▲	● ▲					● ▲	● ▲	● ▲													
speckled sanddab	●		● ▲	● ▲	● ▲					● ▲	● ▲	● ▲													
English sole	●		● ▲	● ▲	● ▲					● ▲	● ▲	● ▲													
starry flounder	●		● ▲	● ▲	● ▲					● ▲	● ▲	● ▲													

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Appendix 12

Life history information and habitat associations for selected invertebrate species using estuarine habitats

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used									
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine						
				OR	WA																						
				WORMS																							
peanut worm <i>Phascolosoma agassizii</i>	PHAG	1-D	6	D	D	1				u	n	k	n	o	w	n							X	X	X		
segmented worm <i>Enchytraeus multiannulatus</i>	ENMU	1-H	5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
segmented worm <i>Pelosclex gabriellae</i>	PEGA	1-H	5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
scale worm <i>Harmothoe imbricata</i>	HAIM	1-G	5	D	D	1				u	n	k	n	o	w	n									X	X	
paddle worm <i>Eteone pacifica</i>	ETPA	1-C	5	D	D	1																		X	X		
worm <i>Syllis hyalina</i>	SYHY	1-C	5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
mussel worm <i>Nereis vexillosa</i>	NEVE	1-G	4,5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
mussel worm <i>Nereis virens</i>	NEVI	1-C	3,4,5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
mussel worm <i>Platynereis bicanaliculata</i>	PLBI	1-C	4,5,6	D	D	1				u	n	k	n	o	w	n								X	X		
blood worm <i>Glycera americana</i>	GLAM	1-C	3,4,5	D	D	1				u	n	k	n	o	w	n									X	X	
blood worm <i>Glycera robusta</i>	GLRO	1-C	3,4,5	D	D	1				u	n	k	n	o	w	n									X	X	
sand worm <i>Nephtys caecoides</i>	NECA	1-C	5,6	D	D	1				u	n	k	n	o	w	n									X	X	
slim worm <i>Lumbrineris zonata</i>	LUZO	1-C	4,5,6	D	D	1				u	n	k	n	o	w	n								X	X		
worm <i>Naineris dendritica</i>	NADE	1-C	4,5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
worm <i>Scoloplos pugettensis</i>	SCPU	1-C	5,6	D	D	1				u	n	k	n	o	w	n								X	X	X	
tube worm <i>Polydora brachycephala</i>	POBR	1-C	5,6	D	D	1				u	n	k	n	o	w	n								X	X		
tube worm <i>Streblospio benedicti</i>	STBE	1-C	5,6	D	D	1				u	n	k	n	o	w	n								X	X		

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- 1 Reproductive activity – Adults or adults and juveniles
2 Seasonal occurrence – Adults or adults and juveniles

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}												
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals	
		Mud	Sand /mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble/gravel	Boulder												Bedrock
WORMS																									
peanut worm	■								●	●		●	●		●										
segmented worm									■	▲			▲			■									
segmented worm									■	●						▲									
scale worm					■	●						■	●		■										
paddle worm	■		●								●														
worm	■					●	▲						●	▲											
mussel worm		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■									
mussel worm	■		●							●															
mussel worm	■									●	●		●	●	●										
blood worm	■		●					●		●						●									
blood worm	■		▲	●	●			●		●		●				●									
sand worm	■		●							●						●									
slim worm	■		●	●				●		●	●		●		●										
worm	■		●					●		●			●		●										
worm	■	●																							
tube worm	■	●		●						●															
tube worm	■	●		▲						▲			●	●		●									

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
worm <i>Tharyx parvus</i>	THPA	1-D	5,6	D	D	1			u	n	k	n	o	w	n			X	X	X	
				CR	CR	2															
worm <i>Armandia brevis</i>	ARBR	1-C	5,6	D	D	1												X	X		
				CR	CR	2															
blood worm <i>Euzonus mucronata</i>	EUMU	1-C	5,6	U	U	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															
worm <i>Ophelia limacina</i>	OPLI	1-C	5,6	D	D	1			u	n	k	n	o	w	n			X			
				CR	CR	2															
tube worm <i>Capitella capitata</i>	CACA	1-C	5,6	D	D	1												X	X	X	X
				CR	CR	2															
tube worm <i>Heteromastus filobranchus</i>	HEFI	1-C	5,6	D	D	1			u	n	k	n	o	w	n			X	X	X	
				CR	CR	2															
tube worm <i>Mediomastus californiensis</i>	MECA	1-C	5,6	D		1			u	n	k	n	o	w	n			X	X	X	
				CR		2															
tube worm <i>Notomastus tenuis</i>	NOTE	1-C	5,6	D	D	1			u	n	k	n	o	w	n			X	X	X	
				CR	CR	2															
lug worm <i>Abarenicola pacifica</i>	ABPA	1-H	4,5,6	D	D	1												X	X		
				CR	CR	2															
tube worm <i>Sabellaria cementarium</i>	SACE	1-D	5,6	D	D	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															
tube worm <i>Amphiteis mucronata</i>	AMMU	1-D	5,6	D	D	1			u	n	k	n	o	w	n			X	X	X	
				CR	CR	2															
tube worm <i>Pista pacifica</i>	PIPA	1-B	5,6	D	D	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															
tube worm <i>Schizobranchia insignis</i>	SCIN	1-B	5,6	D	D	1			u	n	k	n	o	w	n			X	X	X	
				CR	CR	2															
tube worm <i>Serpula vermicularis</i>	SEVE	1-B	5,6	D	D	1			u	n	k	n	o	w	n			X	X		
				CR	CR	2															

MOLLUSCS

finger limpet <i>Collisella digitalis</i>	CODI	1-C	6	U	U	1												X	X		
				CR	CR	2															
Newcomb's littorine <i>Littorina columbiana</i>	LICO	1-G	1	D	D	1													X	X	
				RR	RR	2															
periwinkle snail <i>Littorina scutulata</i>	LISC	1-G	6	U	U	1												X	X		
				CR	CR	2															
wrinkled purple snail <i>Nucella lamellosa</i>	NULA	1-G	6	U	U	1												X	X		
				CR	CR	2															
bay mussel <i>Mytilus edulis</i>	MYED	1-B	2,3,4	D	D	1												X	X		
				CR	CR	2															
pink scallop <i>Chlamys hastata hericia</i>	CHHAHE	1-A	2,3	U	U	1												X			
				RR	CR	2															
native oyster <i>Ostrea lurida</i>	OSLU	1-B	1,2,3	D	D	1													X	X	
				RR	UR	2															
Pacific oyster <i>Crassostrea gigas</i>	CRGI	1-B	2,3,4	D	D	1													X	X	
				CR	CR	2															

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- 1 Reproductive activity – Adults or adults and juveniles
□ 2 Seasonal occurrence – Adults or adults and juveniles

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}											
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
		Mud	Sand /mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand /mud	Sand	Cobble/gravel	Boulder											
worm	■	●							●															
worm	■	▲	●						▲	●														
blood worm	■									▲														
worm	■									▲														
tube worm	■	●	●						●	●														
tube worm	■	●	▲						●	▲														
tube worm	■	●	▲						●	▲														
tube worm	■		●							●														
lug worm									■	■		■												
tube worm	■				●				▲	▲		●												
tube worm	■	●	▲						●	▲														
tube worm	■	●	●	●					●	●														
tube worm	■	●				▲	▲	▲					▲											
tube worm	■	●					▲	▲	▲				▲	▲	▲									

MOLLUSCS

finger limpet	■										●	●	●	●										
Newcomb's littorine													■	■										
periwinkle snail												■	■	■	■									
wrinkled purple snail												■	■	■	■									
bay mussel	■	●										▲	▲	▲										
pink scallop	■	●		▲	▲	▲	▲																	
native oyster	■	●	▲		▲				▲		▲													
Pacific oyster	■	●	▲						▲	▲	▲	▲	▲	▲										

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 - Juveniles
- 2 - Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
native littleneck clam <i>Protothaca staminea</i>	PRST	1-B	2,3,4	D	D	1												X	X		
butter clam <i>Saxidomus giganteus</i>	SAGI	1-B	2,3,4	D	D	1												X	X		
Manila littleneck clam <i>Tapes japonica</i>	TAJA	1-B	2,3,4	D	D	1													X	X	
transennella clam <i>Transennella tantilla</i>	TRTA	1-B	5	D	D	1													X	X	
cockle clam <i>Clinocardium nuttallii</i>	CLNU	1-B	2,3,4	D	D	1												X	X	X	
gaper clam <i>Tresus capax</i>	TRCA	1-B	2,3,4	D	D	1												X	X	X	
Baltic Clam <i>Macoma balthica</i>	MABA	1-D	2,5	D	D	1													X	X	X
macoma clam <i>Macoma inquinata</i>	MAINQ	1-D	2	D	D	1													X	X	X
bentnose clam <i>Macoma nasuta</i>	MANA	1-D	2	D	D	1													X	X	X
California soft-shelled clam <i>Cryptomya californica</i>	CRCA	1-B	6	D	D	1													X	X	X
soft-shelled clam <i>Mya arenaria</i>	MYAR	1-B	2,3,4	D	D	1													X	X	X
geoduck clam <i>Panopea generosa</i>	PAGE	1-B	2,3,4	D	D	1												X	X		
piddock clam <i>Zirfaea pilsbryi</i>	ZIPI	1-B	2,4	D	D	1												X			

CRUSTACEANS

copepod <i>Acartia clausi</i>	ACCL	1-A	5,6	D	D	1												X	X		
copepod <i>Acartia longiremis</i>	ACLO	1-A	5,6	D	D	1												X	X		
copepod <i>Calanus marshallae</i>	CAMA	1-A	5,6	U	U	1												X	X		
copepod <i>Paracalanus parvus</i>	PAPA	1-A	5,6	U	U	1												X	X		
acorn barnacle <i>Balanus glandula</i>	BAGL	1-B	6	U	U	1												X	X		
oppossum shrimp <i>Neomysis mercedis</i>	NEME	1-A	5,6	D	D	1												X	X		
cumacean <i>Cumella vulgaris</i>	CUVU	1-G	6	U	U	1												X	X	X	
tanaisid <i>Leptochelia dubia</i>	LEDU	1-G	5,6	D	D	1												X	X	X	
tanaisid <i>Leptochelia savignyi</i>	LESA	1-G	5,6	D	D	1												X	X	X	

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

- R – Resident
W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- 1 Reproductive activity – Adults or adults and juveniles
2 Seasonal occurrence – Adults or adults and juveniles

Species	Estuarine habitats ^{6/}												Food organisms used ^{7/}											
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
		Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/gravel	Boulder	Bedrock	Vegetation									
native littleneck clam	■●		▲	▲	▲					▲	▲	▲												
butter clam	■●		▲	▲	▲					▲	▲	▲												
Manila littleneck clam	■●									▲		▲												
transennella clam	■●		▲	▲				▲		▲	▲				▲									
cockle clam	■●		▲	▲				▲		▲	▲				▲									
gaper clam	■●		▲	▲	▲					▲	▲	▲												
Baltic clam	■								●	●					●									
macoma clam	■	●	●					●	●	●					●									
bentnose clam	■	●	●					●	●	●	●	●			●									
California soft-shelled clam	■●								▲	▲	▲													
soft-shelled clam	■●	▲	▲						▲	▲														
geoduck clam	■●	▲	▲	▲					▲	▲	▲													
piddock clam	■●						▲								▲									

CRUSTACEANS

copepod	■●																							
copepod	■●																							
copepod	■●																							
copepod	■●																							
acorn barnacle	■●												▲	▲										
oppossum shrimp	■●																							
cumacean	■●	●	▲						■●	▲														
taenid	■●	●	▲				●		■●	▲				●										
taenid	■●	●	▲				●		■●	▲				●										

^{6/} Use codes

- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 - Juveniles
- 2 - Adults or adults and juveniles

Species	Letter code	Life form	Justification ^{1/}	Use ^{2/}		1. – Reproductive activity ^{5/} and 2. – Seasonal occurrence												Estuarine subsystem used			
				Abundance ^{3/} Status ^{4/}		January	February	March	April	May	June	July	August	September	October	November	December	Marine	Bay	Slough	Riverine
				OR	WA																
isopod <i>Idotea resicata</i>	IDRE	1-G	6	U	U	1												X	X		
isopod <i>Idotea wosnesenskii</i>	IDWO	1-G	6	U	U	1												X	X		
isopod <i>Gnorimosphaeroma oregonensis</i>	GNOR	1-G	6	U	U	1												X	X		
amphipod <i>Ampithoe humeralis</i>	AMHU	1-G	6	U	U	1												X	X		
amphipod <i>Corophium brevis</i>	COBR	1-G	5,6	D	D	1												X	X	X	
amphipod <i>Corophium salmonis</i>	COSA	1-G	5,6	D	D	1												X	X	X	X
amphipod <i>Corophium spinicorne</i>	COSP	1-G	5,6	D	D	1												X	X	X	
amphipod <i>Eogammarus confervicolus</i>	EOCO	1-G	5,6	D	D	1												X	X	X	X
amphipod <i>Eogammarus pugettensis</i>	EOPU	1-G	5,6	D	D	1													X	X	X
amphipod <i>Eohaustorius estuarius</i>	EOES	1-G	5,6	U	U	1												X	X	X	
bay crangon (shrimp) <i>Crangon franciscorum</i>	CRFR	1-C	5,6	U	U	1												X	X	X	X
kelp crab <i>Pugettia gracilis</i>	PUGR	1-C	5,6	U	U	1												X	X		
Dungeness crab <i>Cancer magister</i>	CANMA	1-C	2,3,4,6	U	U	1												X	X	X	
Oregon cancer crab <i>Cancer oregonensis</i>	CAOR	1-C	6	U	U	1												X	X	X	
red rock crab <i>Cancer productus</i>	CAPR	1-C	4,6	D	D	1												X	X	X	
purple shore crab <i>Hemigrapsus nudus</i>	HENU	1-C	5,6	U	U	1												X	X		
mud crab <i>Hemigrapsus oregonensis</i>	HEOR	1-C	5,6	U	U	1												X	X	X	
ghost shrimp <i>Callinassa californiensis</i>	CALCA	1-C	3,4,5,6	D	D	1												X	X	X	
mud shrimp <i>Upogebia pugettensis</i>	UPPU	1-C	4,5,6	D	D	1												X	X	X	X

^{1/} Justification for consideration

1. Threatened or endangered
2. State special species
3. Commercially important
4. Recreationally important
5. Important prey species
6. Heavily impacted by forest practices

^{2/} Use codes

- D – Dependent
U – Uses

^{3/} Abundance codes

- C – Common
U – Uncommon
R – Rare

^{4/} Status codes

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W – Winter resident
S – Summer resident
M – Migrant

^{5/} Reproduction and occurrence

- 1 Reproductive activity – Adults or adults and juveniles
■ 2 Seasonal occurrence – Adults or adults and juveniles

Species	Estuarine habitats ^{§/}												Food organisms used ^{7/}											
	Water column	Subtidal substrates						Intertidal substrates						Detritus	Phytoplankton	Zooplankton	Benthic algae & plants	Insects	Benthic Invertebrates	Fish	Amphibians	Reptiles	Birds	Mammals
		Mud	Sand/mud	Sand	Cobble/grave	Boulder	Bedrock	Vegetation	Mud	Sand/mud	Sand	Cobble/grave	Boulder	Bedrock	Vegetation									
isopod					●			●				●			●									
isopod					●			●				●			●									
isopod					●			●				●			●									
amphipod								●				●			●									
amphipod		●	●					●	●			●												
amphipod		●	●					●	●	●		●												
amphipod		●	●					●	●	●		●			●									
amphipod								●	●	●		●			●									
amphipod								●	●	●		●			●									
amphipod								●	●	●		●			●									
amphipod				●								●												
bay crangon (shrimp)	■	●	●					●	●															
kelp crab	■							●							●									
Dungeness crab	■	●	●	●				●	●	●	●				●									
Oregon cancer crab	■											●												
red rock crab	■	●				●		●		●		●			●									
purple shore crab	■									●	●	●												
mud crab	■	●	●			●		●	●	●		●			●									
ghost shrimp	■								●	●														
mud shrimp	■	●	●					●	●															

^{§/} Use codes

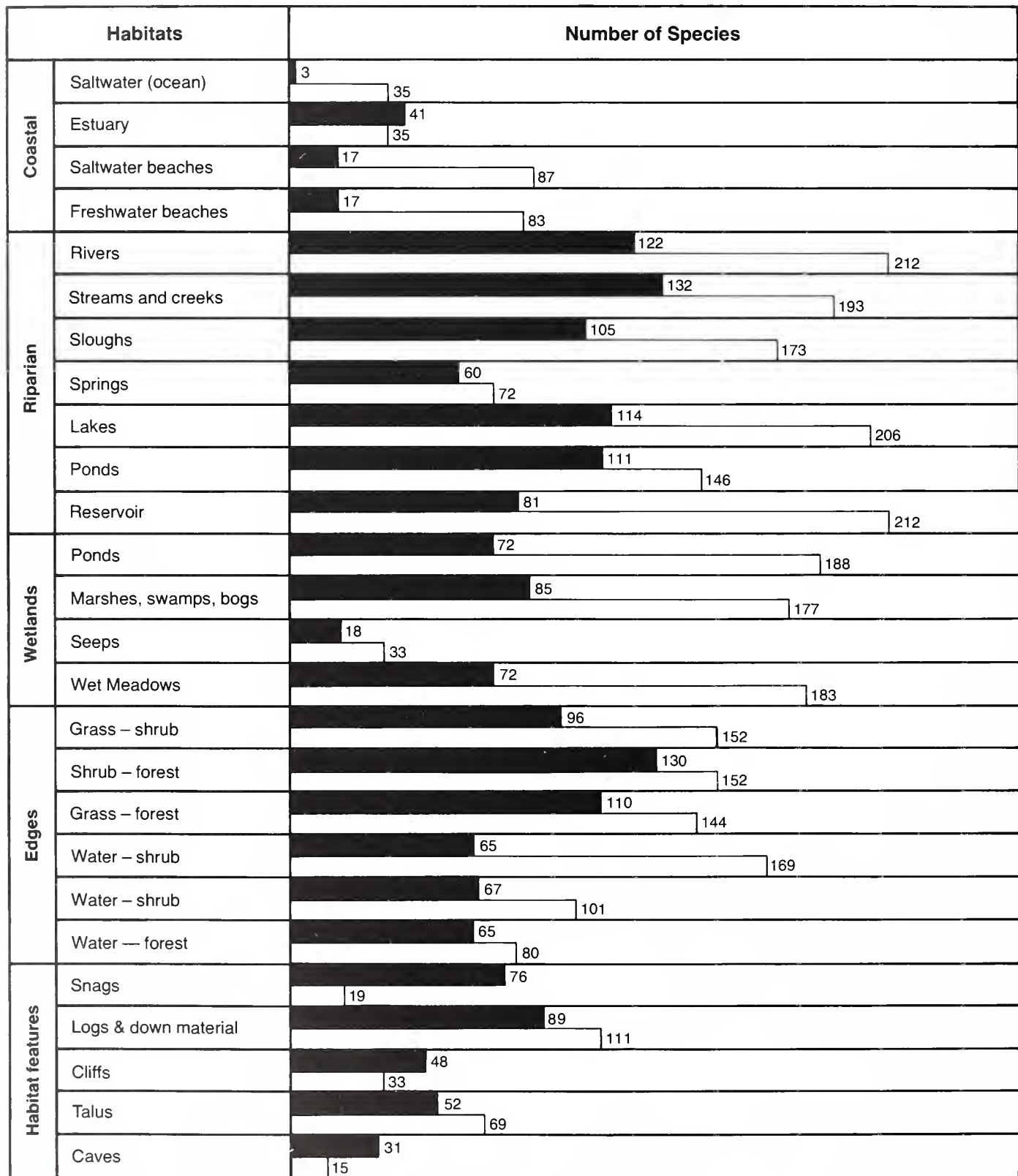
- - Breeding
- - Feeding
- ▲ - Resting

^{7/} Food organisms used by:

- 1 – Juveniles
- 2 – Adults or adults and juveniles

Appendix 13

Total number of wildlife species using each special and unique habitat for breeding and feeding (source: appendix 8)



■ Breeding □ Feeding

Appendix 14

Total number of wildlife species using plant communities and special and unique habitats for breeding and feeding regardless of stand condition (source: appendix 8)

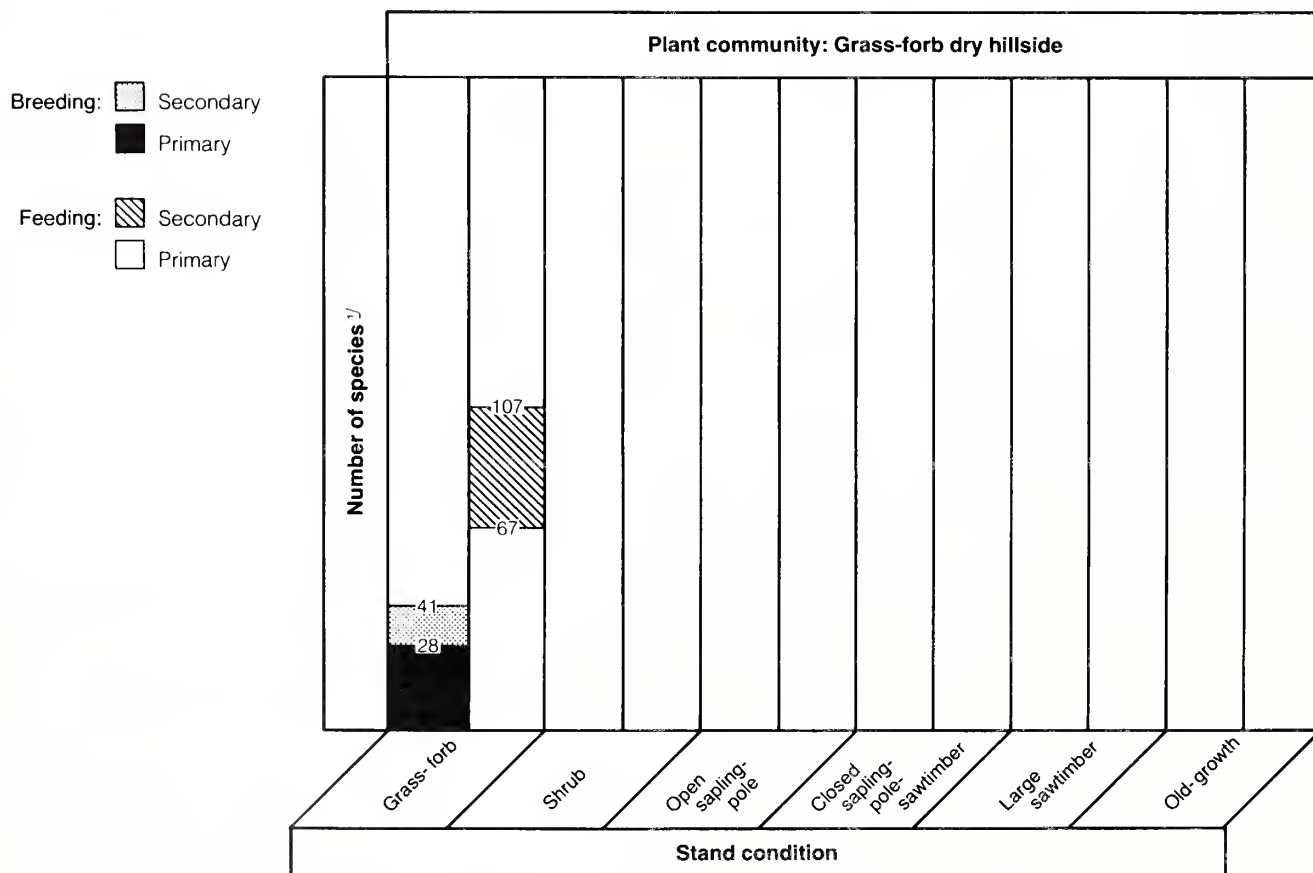
Habitats		Number of Species	
Non-forested plant communities	Dry hillsides	41	107
	Mountain shrubland and chaparral	99	166
Forested plant communities	Deciduous hardwood	172	207
	Red alder forest	136	178
	Evergreen hardwood	117	151
	Conifer-hardwood forest	194	214
	Mixed coniferous forest (SW Oregon)	203	227
	Temperate coniferous forest	182	203
	High temperate coniferous forest	163	178
	Subalpine forest parks	119	141
	Lodgepole pine (Cascades)	98	127
	Shorepine (coast)	77	127
Riparian/wetland plant communities	Herbaceous wetland	69	178
	Hardwood and shrubby wetland	214	267
	Coniferous wetland	201	243
Special and unique habitats	Coastal	52	176
	Riparian	159	260
	Wetlands	122	245
	Edges	227	298
	Habitat features ^{1/}	171	141

■ Breeding; □ Feeding

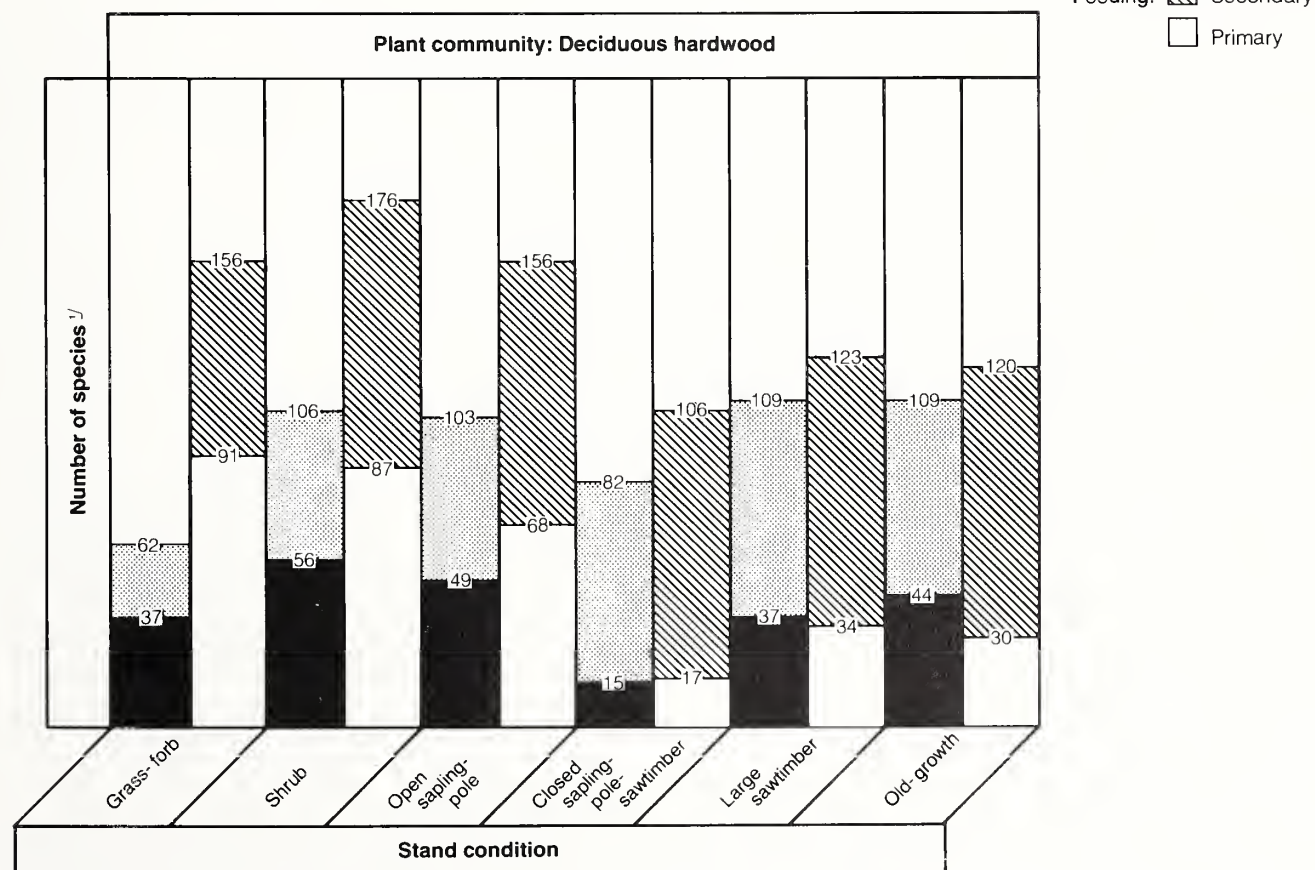
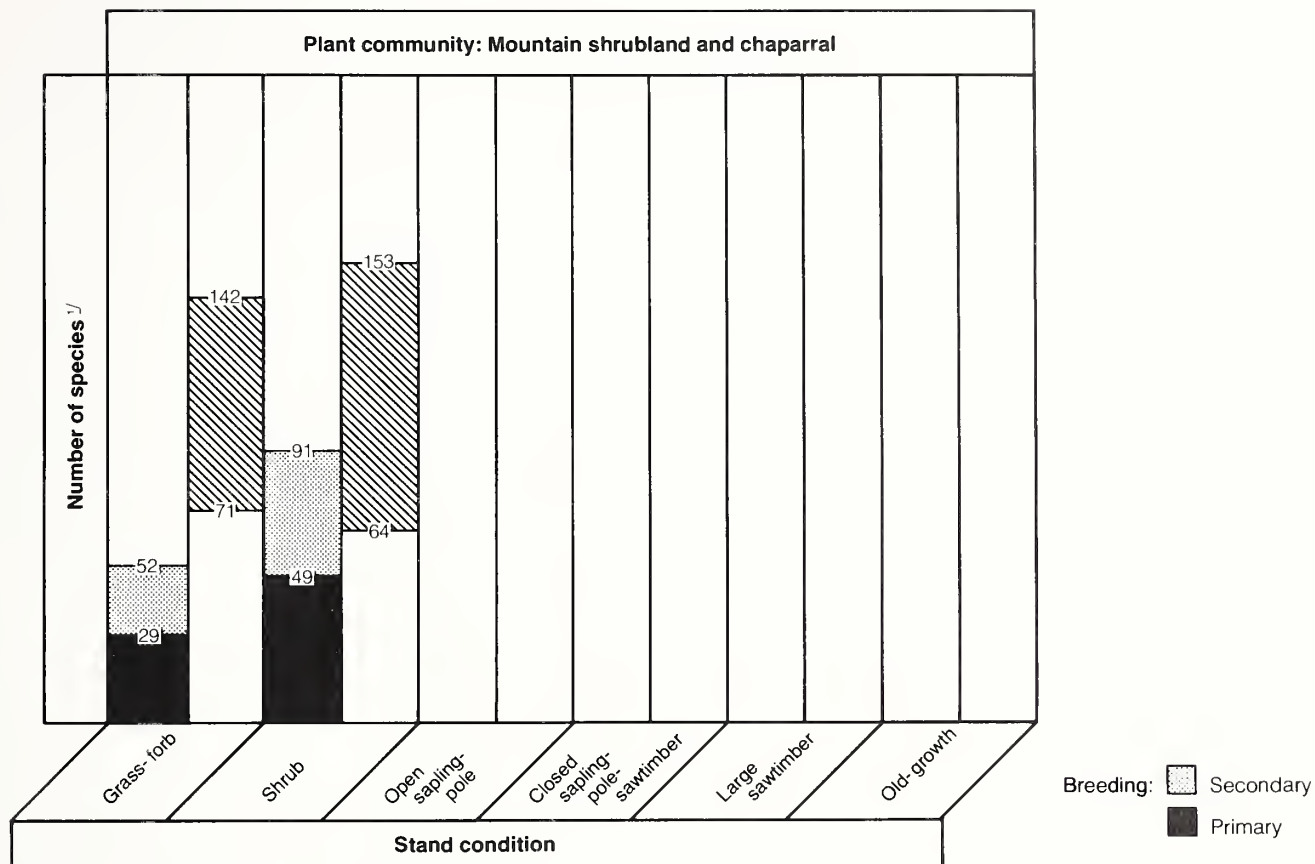
^{1/} Includes: snags, logs and down material, cliffs, talus, caves.

Appendix 15

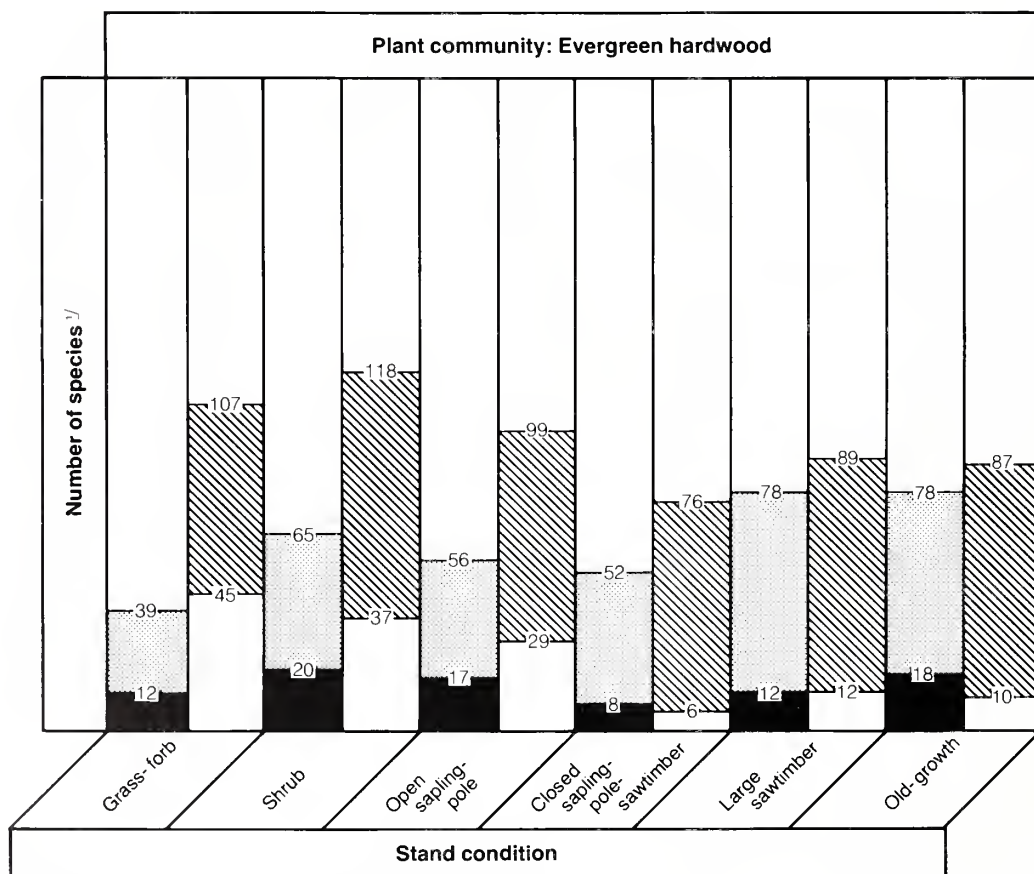
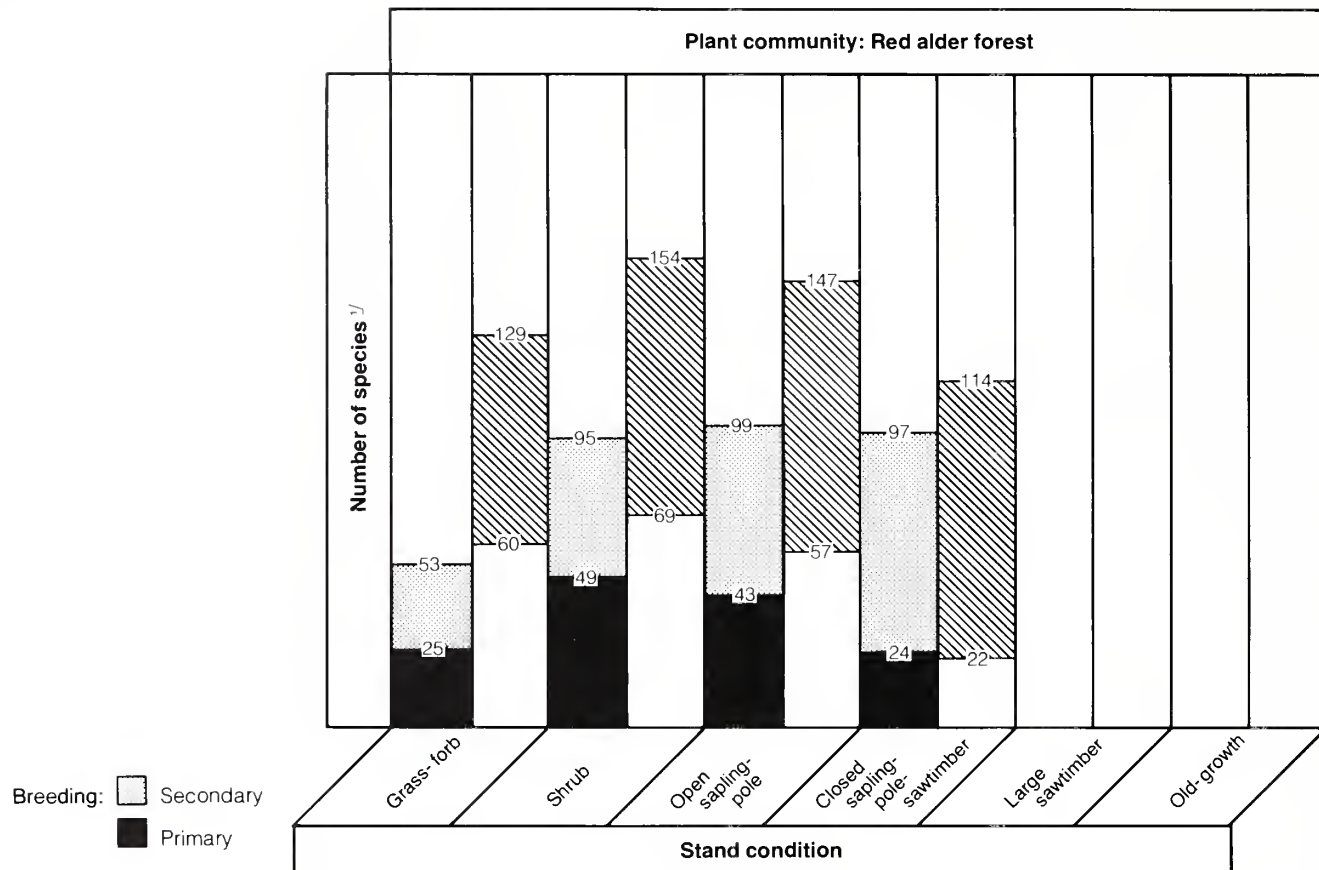
Number of wildlife species using each stand condition within each plant community



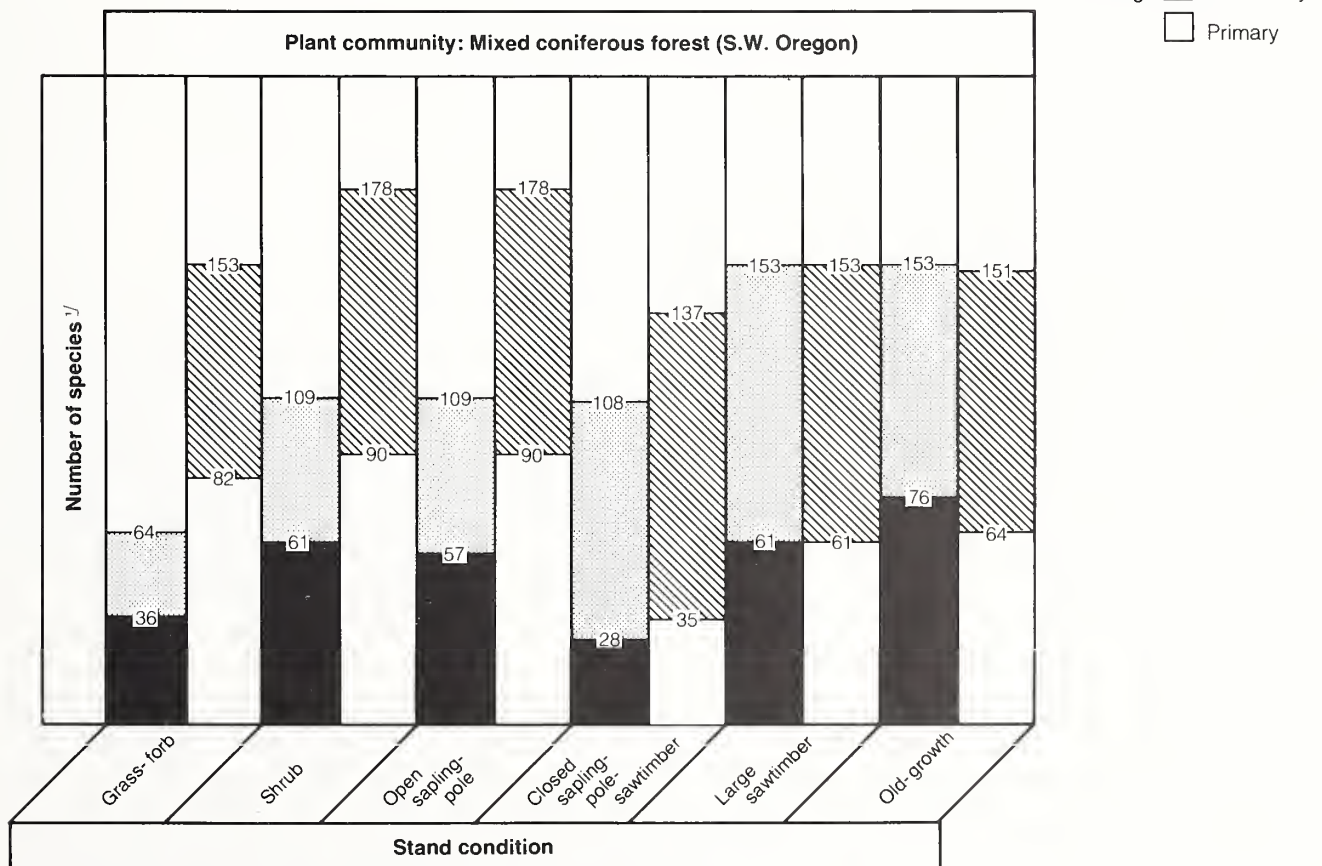
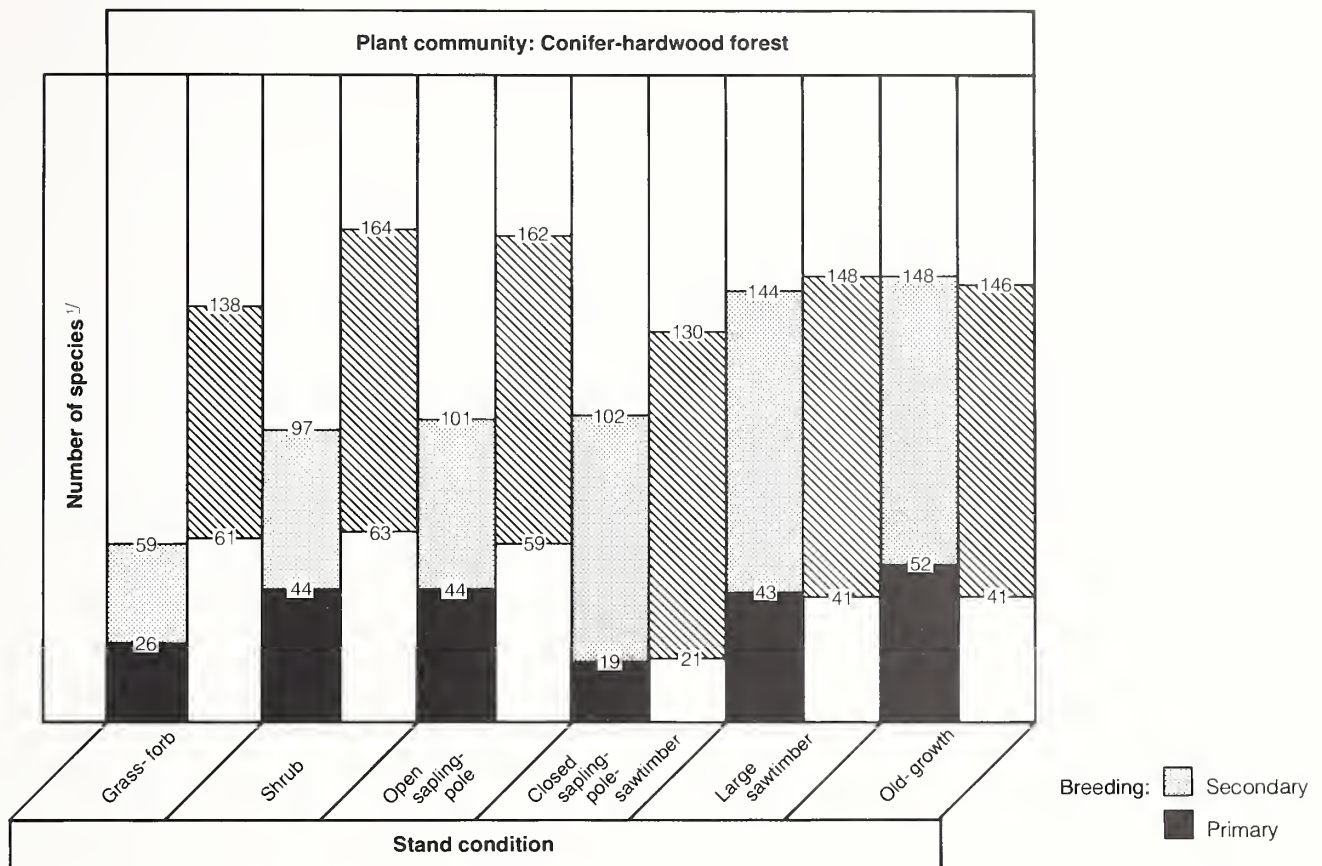
^{1/} The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



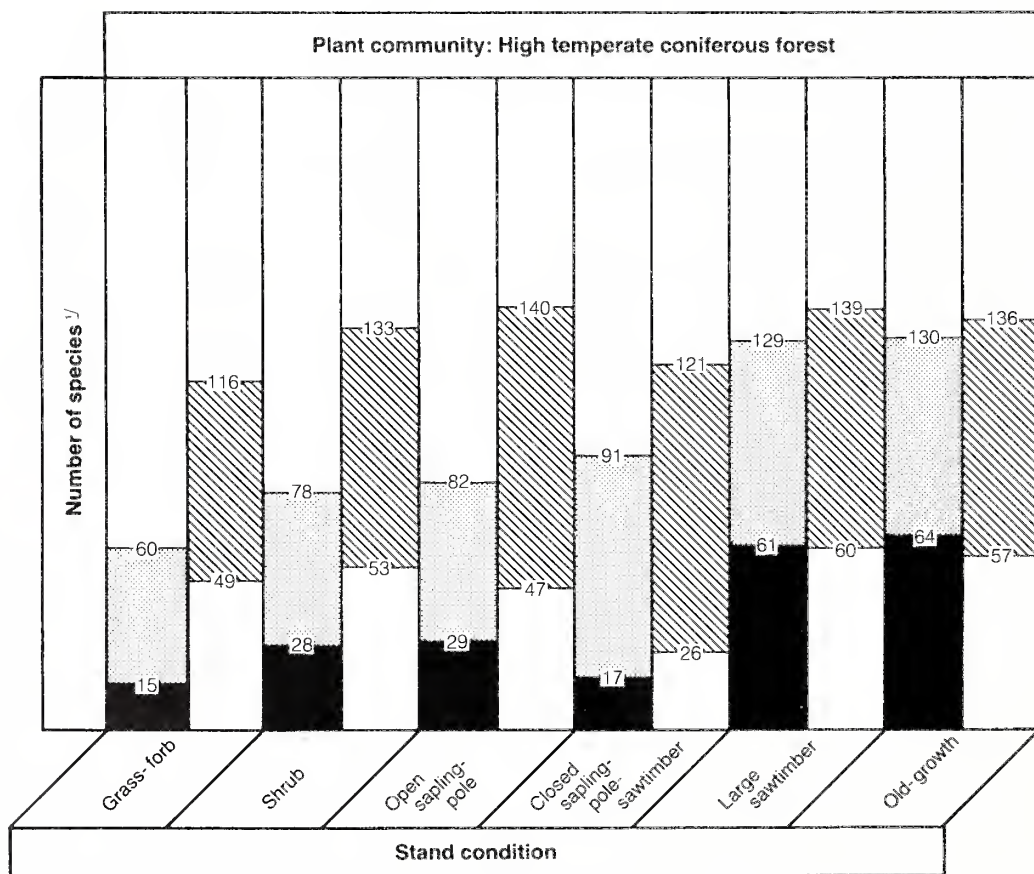
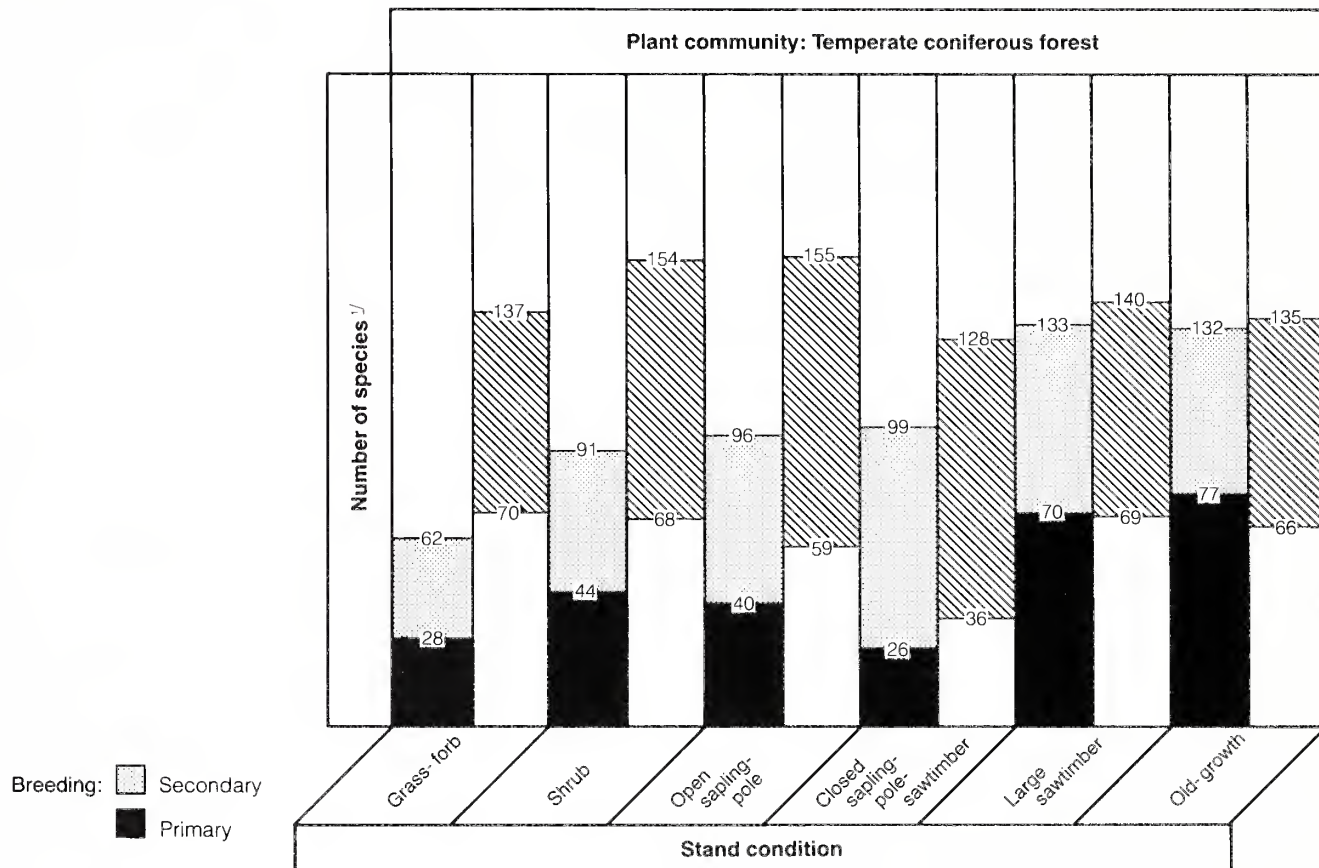
1/ The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



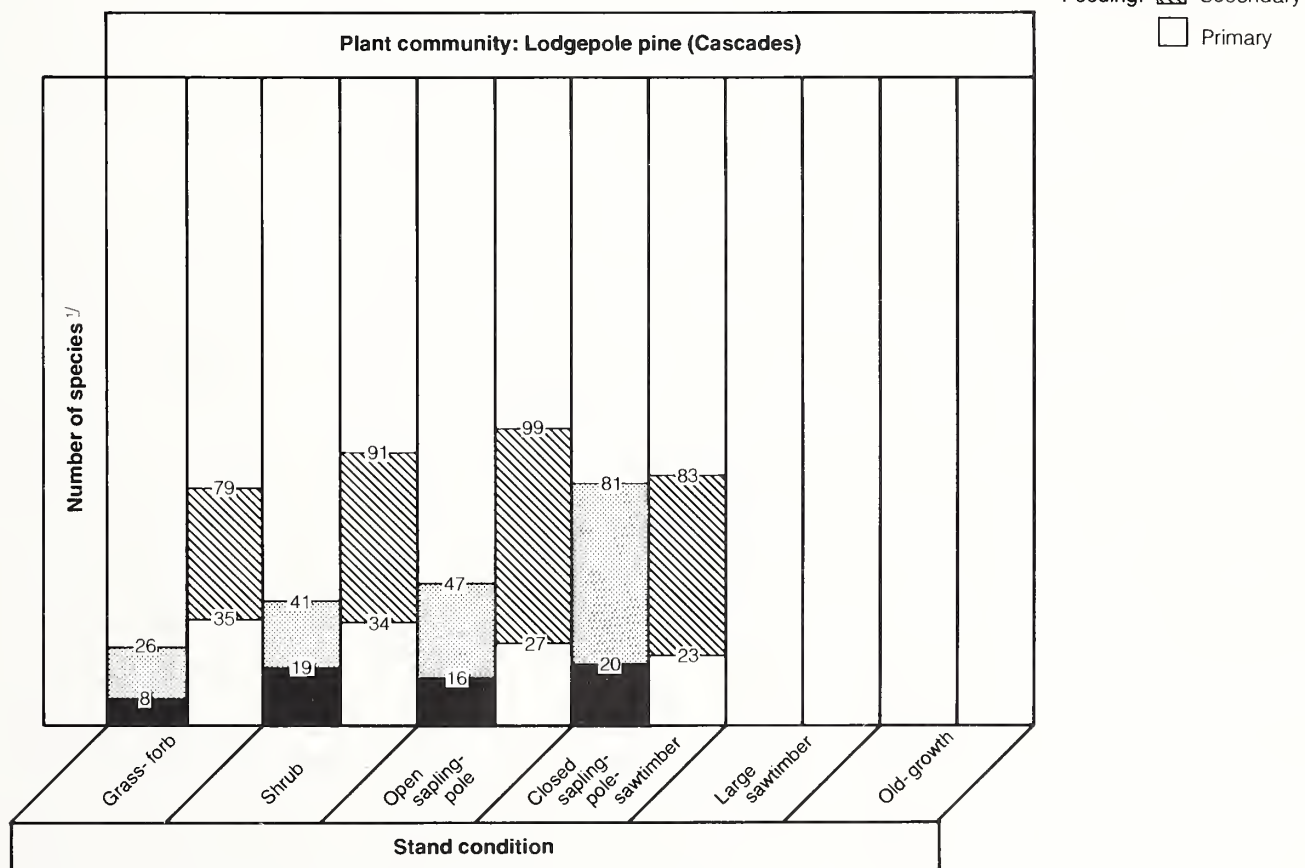
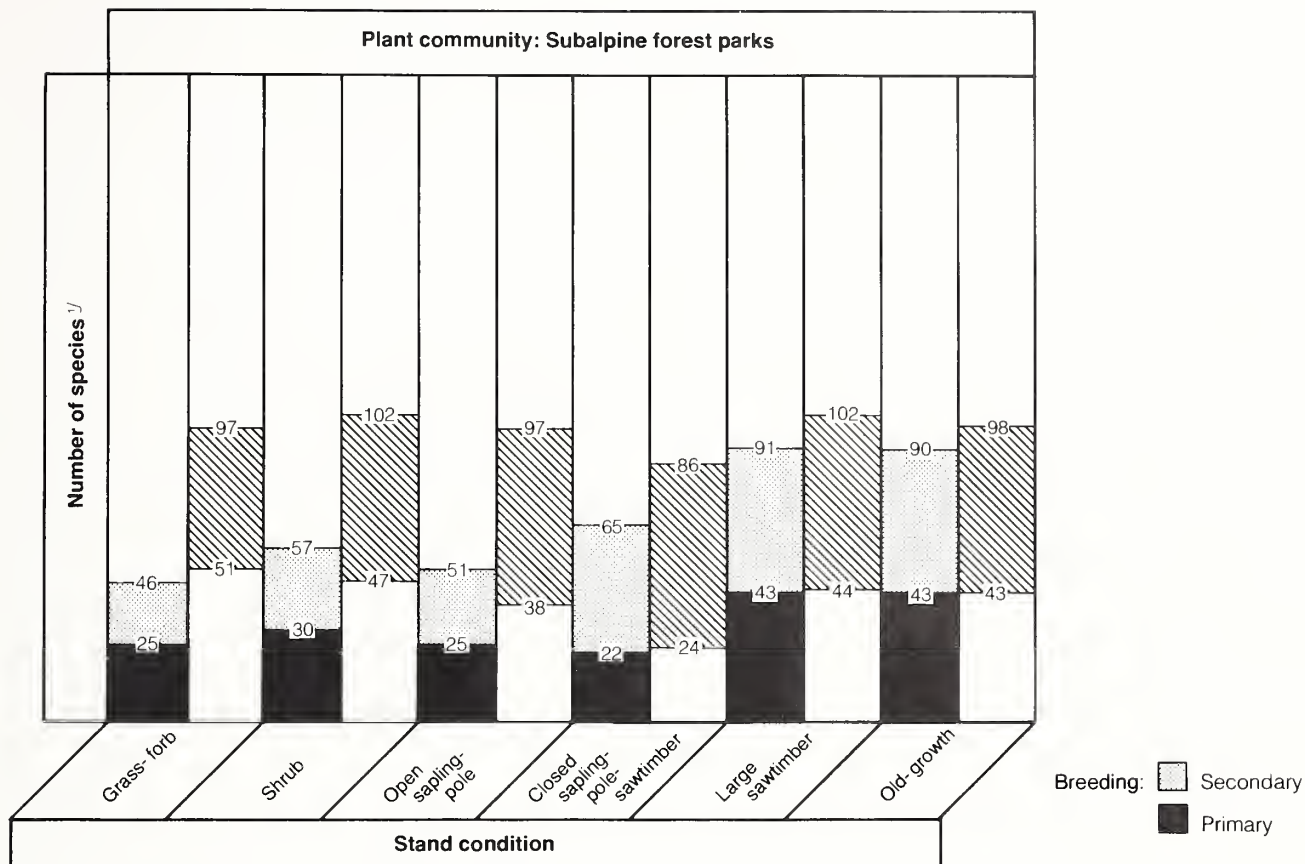
$\frac{1}{2}$ The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



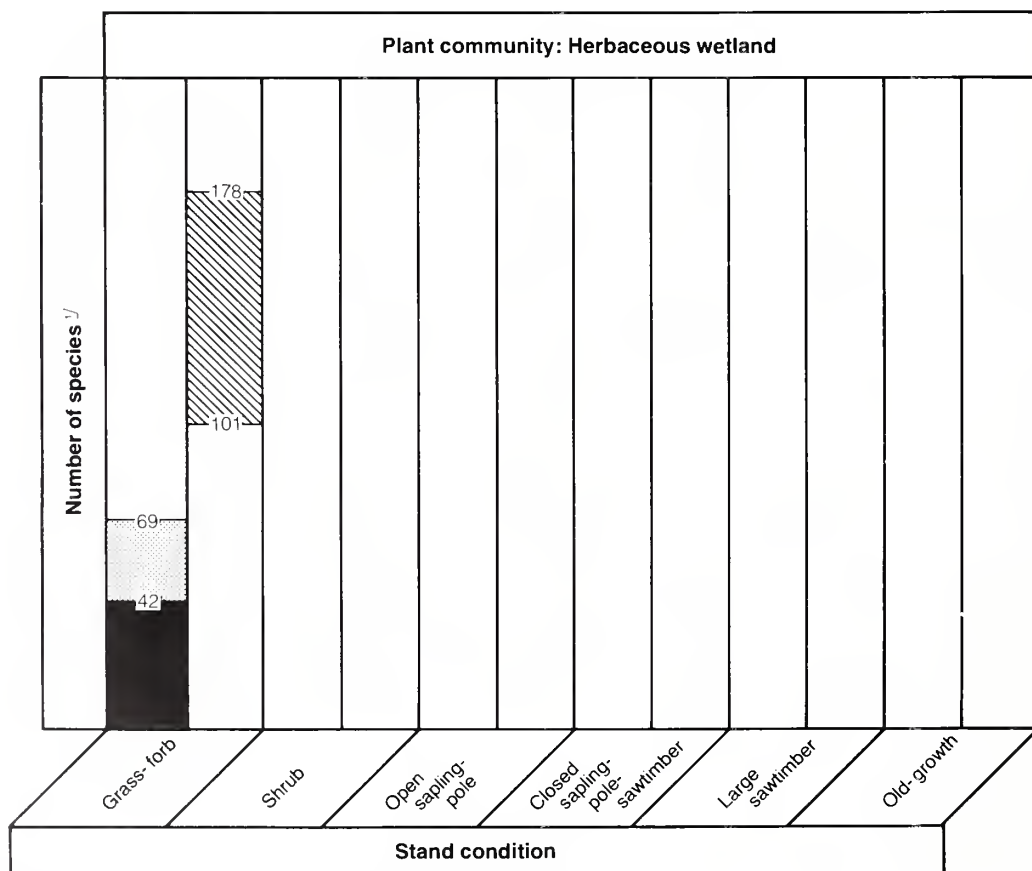
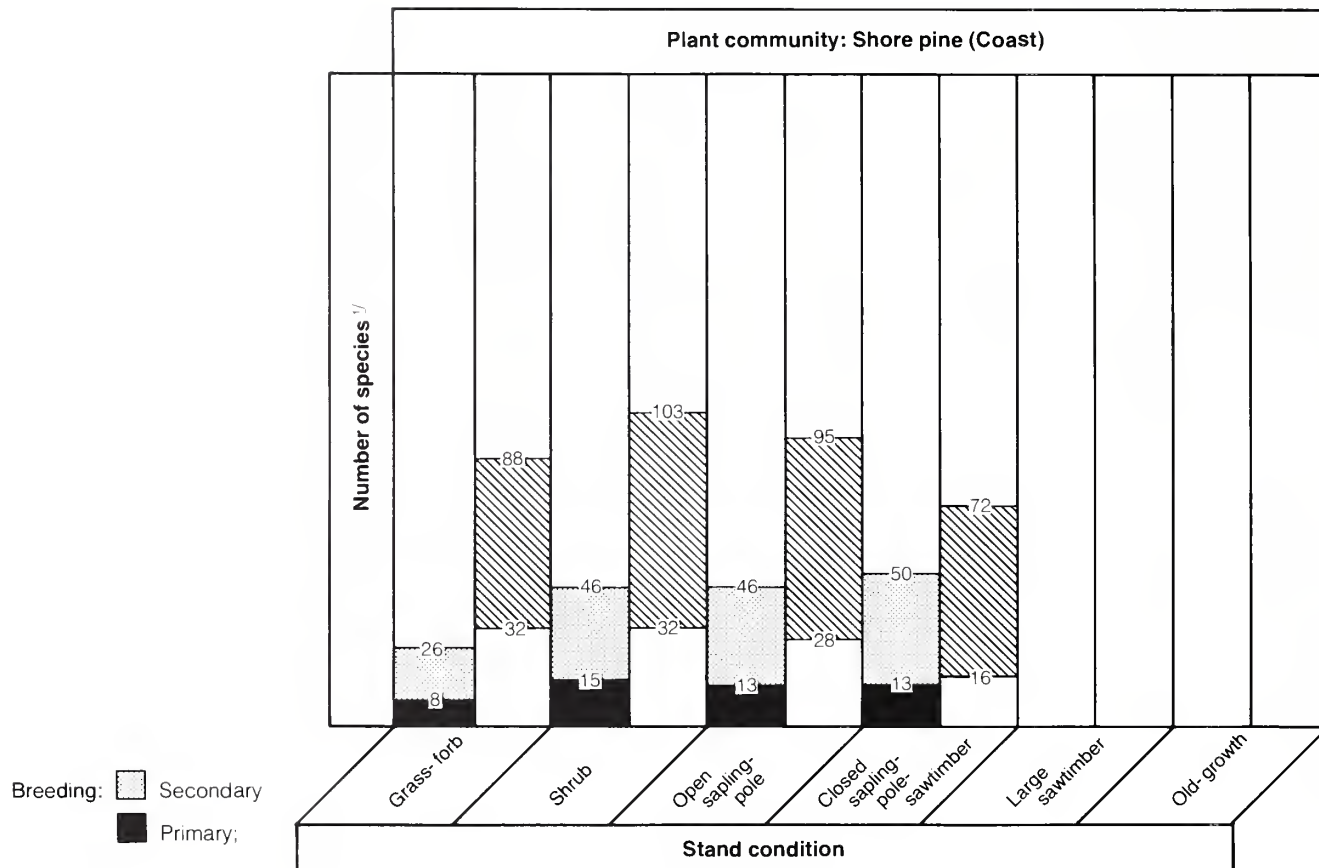
1/2 The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



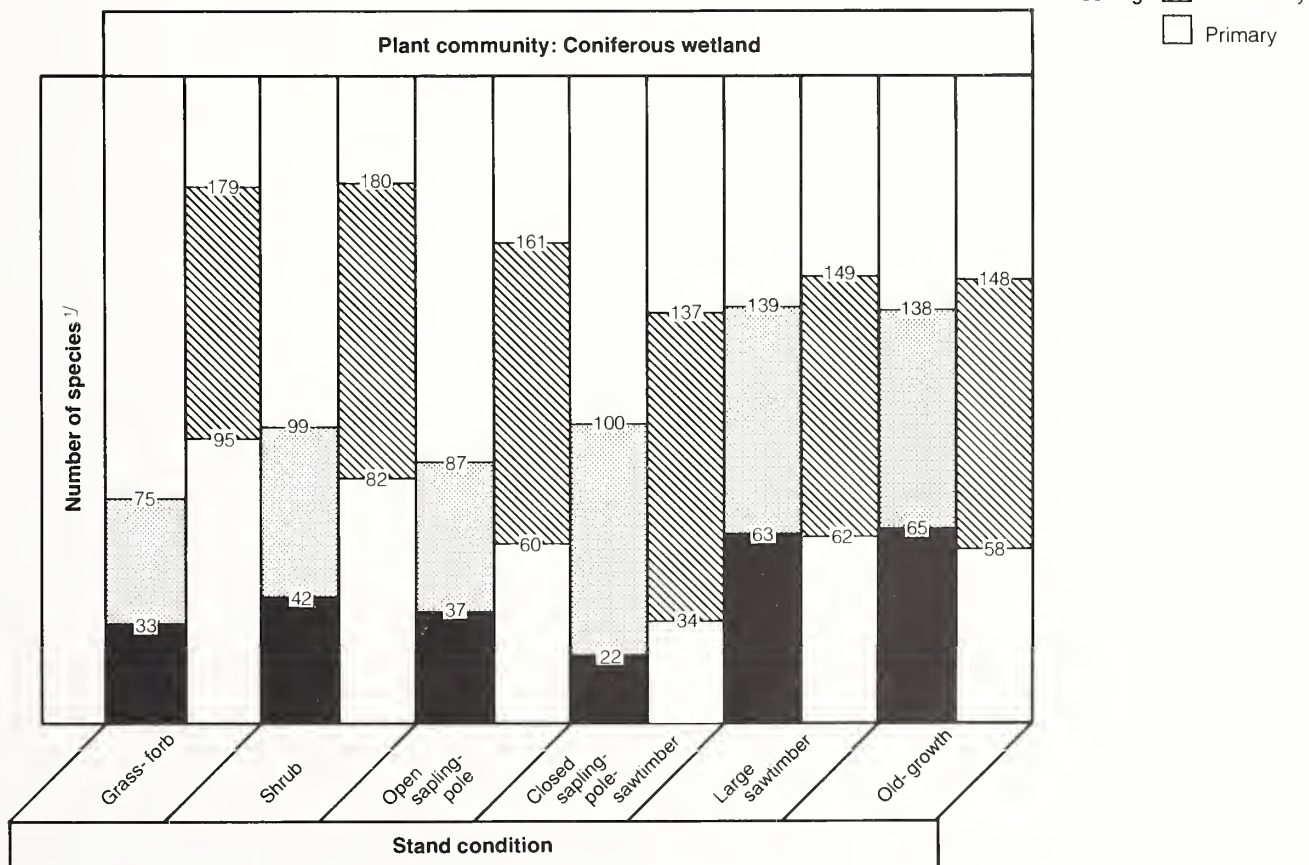
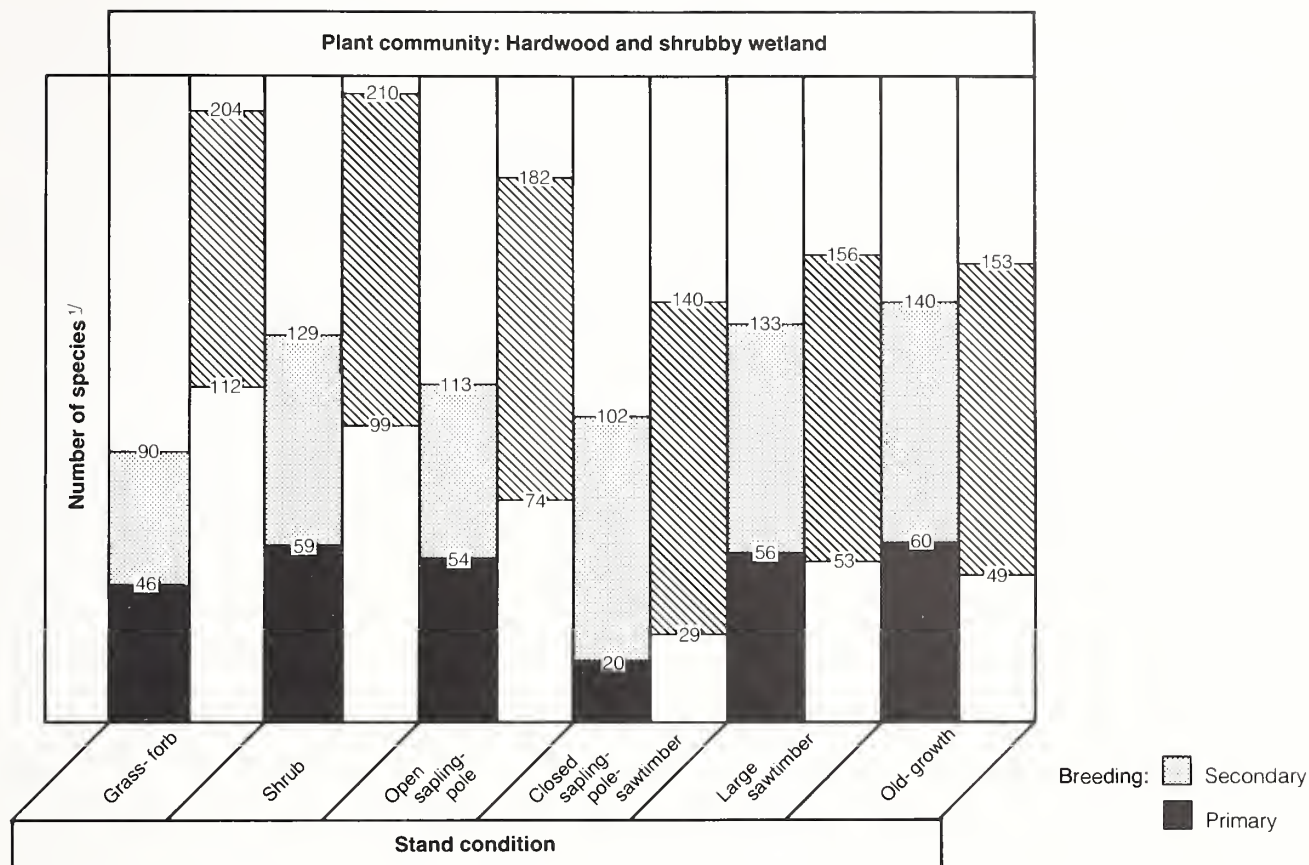
1/ The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



1/ The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.



∩ The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.






















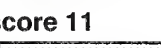
^{1/} The lower number in each column represents primary use only; the upper number a combination of both primary and secondary use.

Appendix 16











Individual wildlife species grouped by versatility scores. The use each species makes of plant communities and stand conditions for breeding and feeding

Versatility score 2																			
ANAL	greater white-fronted goose	3		1		1	<div></div>												
CHCA	snow goose	3		1		1	<div></div>												
PLSQ	black-bellied plover	5		1		1	<div></div>												
PLDQ	lesser golden-plover	5		1		1	<div></div>												
TRME	greater yellowlegs	3		1		1	<div></div>												
TRFL	lesser yellowlegs	3		1		1	<div></div>												
NUPH	whimbrel	5		1		1	<div></div>												
NUAM	long-billed curlew	3		1		1	<div></div>												
CAMAU	western sandpiper	3		1		1	<div></div>												
CAMI	least sandpiper	3		1		1	<div></div>												
CABA	Baird's sandpiper	5		1		1	<div></div>												
CAMEL	pectoral sandpiper	5		1		1	<div></div>												
CAALP	dunlin	3		1		1	<div></div>												
CAHI	stilt sandpiper	3		1		1	<div></div>												
LISC	long-billed dowitcher	3		1		1	<div></div>												
Versatility score 4																			
CYCO	tundra swan	3		3		1	<div></div>												
CYBU	trumpeter swan	3		3		1	<div></div>												
FARU	gyrfalcon	4		3		1	<div></div>												
GRCA	sandhill crane	3		3		1	<div></div>												
CHSE	semipalmated plover	3		3		1	<div></div>												
CHVO	killdeer	3	1	1	1	1	<div></div>												
TRSO	solitary sandpiper	7		3		1	<div></div>												
ACMA	spotted sandpiper	3	1	1	1	1	<div></div>												
PHTR	Wilson's phalarope	3	1	1	1	1	<div></div>												
CHNI	black tern	3		3		1	<div></div>												
Versatility score 5																			
ANPE	Eurasian wigeon	3		3		2	<div></div>												
OCPR	pika	4		3		2	<div></div>												
Letter code	Species common name		B	F	B	F	3	6	9	12	15	18	21	24	27	30	33	36	39
			Life form				No. of plant communities used				No. of stand conditions used				Versatility rating (mean scale)				
							Low-122 species				Medium-154 species				High-82 species				

Versatility score 10

PLLA	Larch Mountain salamander	4	1	1	4	4	
BOLE	American bittern	3	3	3	2	2	
ANCR	green-winged teal	3	3	3	2	2	
ANPL	mallard	3	3	3	2	2	
ANDI	blue-winged teal	3	3	3	2	2	
ANCY	cinnamon teal	3	3	3	2	2	
ANST	gadwall	3	3	3	2	2	
ANAAM	American wigeon	3	3	3	2	2	
PAHA	osprey	12	8		2		
FAME	prairie falcon	4		8		2	
COVI	northern bobwhite	5	3	3	2	2	
RALI	Virginia rail	3	3	3	2	2	
PORCA	sora	3	3	3	2	2	
FUAM	American coot	3	3	3	2	2	
CHFA	wrentit	8	3	3	2	2	
AGTR	tricolored blackbird	7	3	3	2	2	
MIRI	water vole	15	3	3	2	2	
SYBO	northern bog lemming	15	4	4	1	1	
MYCO	nutria	16	3	5	1	1	
LECA	black-tailed jack rabbit	5	3	3	2	2	

Versatility score 11

RAPR	spotted frog	2		5		6	
CHPI	painted turtle	3	5		6		
AGPH	red-winged blackbird	7	3	3	2	3	
PLTO	Townsend's big-eared bat	4		7		4	
MAFL	yellow-bellied marmot	4	3	6	1	1	
SYNU	Nuttall's cottontail	15	4	4	1	2	
Letter code	Species common name	Life form	B	F	B	F	
							
							
							
							3 6 9 12 15 18 21 24 27 30 33 36 39
							Low-122 species Medium-154 species High-82 species
Versatility rating (mean scale)							

B - Breeding; F - Feeding

 Breeding;  Feeding

Versatility score 12

RANCA	Cascade frog	2		6		6	
CLMA	western pond turtle	3	9		3		
LOCUC	hooded merganser	14	9		3		
STOC	spotted owl	14	4	4	1	3	
PIAL	white-headed woodpecker	13	3	3	3	3	
SANI	black phoebe	4	3	4	2	3	
HiPY	cliff swallow	4		11		1	
SAOB	rock wren	4	4	4	2	2	
CATME	canyon wren	4	4	4	2	2	
CHGR	lark sparrow	5	3	3	3	3	
PETRU	piñon mouse	4	3	3	3	3	
MICAL	California vole	15	5	5	1	1	
MICAN	gray-tailed vole	15	5	5	1	1	
MIMO	montane vole	15	4	4	2	2	
ONZI	muskrat	16	3	3	3	3	
ORCU	European rabbit	15	3	3	3	3	
SYFL	eastern cottontail	15	4	4	2	2	

Versatility score 13

RHOL	Olympic salamander	2		7		6	
CICY	northern harrier	5	4	5	2	2	
ZOAT	golden-crowned sparrow	5		10		3	
CAFL	common redpoll	11		7		6	

Versatility score 14

PLDU	Dunn's salamander	3		8		6	
ASTR	tailed frog	2		8		6	
RABO	foothill yellow-legged frog	2		8		6	
ARHE	great blue heron	12	7	3	3	1	
LAEX	northern shrike	7		12		2	
VIOL	red-eyed vireo	11	2	2	5	5	
ORAM	mountain goat	4	3	3	4	4	
THBU	Camas pocket gopher	15	5	5	2	2	
DIHE	Heermann's kangaroo rat	15	5	5	2	2	
ARLO	red tree vole	10	4	4	3	3	
PHIN	heather vole	15	3	3	4	4	

Letter code				B	F	B	F	3	6	9	12	15	18	21	24	27	30	33	36	39
	Species common name							Low-122 species			Medium-154 species			High-82 species						
			Life form	No. of plant communities used	No. of stand conditions used			Versatility rating (mean scale)												

B - Breeding, F - Feeding

Breeding, Feeding

Appendix 16















Versatility score 15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
SPHTH	Williamson's sapsucker	13	4	4	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PITR	three-toed woodpecker	13	4	4	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
EMOB	dusky flycatcher	8	5	5	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
TYVE	western kingbird	11	4	6	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
NUCO	Clark's nutcracker	10	3	3	3	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PASA	Savannah sparrow	5	6	7	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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PLEL	Del Norte salamander	4	5	5	3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PLEST	Siskiyou Mountains salamander	4	4	4	4	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PHNU	common poorwill	6	5	5	3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
MEFO	acorn woodpecker	13	4	5	2	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PIAR	black-backed woodpecker	13	4	5	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PIPI	black-billed magpie	7	4	7	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SICU	mountain bluebird	14	2	7	2	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PICH	green-tailed towhee	7	5	6	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
PIFU	brown towhee	7	3	4	4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
STUNE	western meadowlark	5	3	11	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
LOLE	white-winged crossbill	10	4	6	3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SOPAL	water shrew	16	2	2	6	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
THBO	Botta's pocket gopher	15	7	7	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
REME	western harvest mouse	15	6	6	2	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CLCA	western red-backed vole	15	5	5	3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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DIEN	Pacific giant salamander	2		11		6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
AQCH	golden eagle	4	3	11	1	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
FACO	merlin	11		14		3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
MELE	Lewis' woodpecker	13	4	6	2	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
HIRU	barn swallow	4		15		2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SICAR	white-breasted nuthatch	13	4	5	3	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
BOGA	Bohemian waxwing	10		12		5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Letter code	Species common name	Life form	No. of plant communities used	No. of stand conditions used	Versatility rating (mean scale)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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B - Breeding, F - Feeding







Breeding; Feeding

Versatility score 18																				
PLVA	Van Dyke's salamander	3	6	6	3	3														
ANFL	black salamander	5	3	3	6	6														
RAAU	red-legged frog	2		12		6														
SCEGR	sagebrush lizard	5	6	6	3	3														
AYCO	ring-necked duck	3	3	3	6	6														
BULI	red-shouldered hawk	12	3	6	3	6														
DECA	spruce grouse	5	3	3	6	6														
MYCI	ash-throated flycatcher	14	3	5	4	6														
PAAT	black-capped chickadee	14	5	5	3	5														
TRAE	house wren	14	5	5	4	4														
PAAMO	lazuli bunting	7	6	7	2	3														
GUGU	wolverine	5	3	5	4	6														
ODVILE	Columbian white-tailed deer	5	4	4	5	5														
THTA	northern pocket gopher	15	6	6	3	3														
PEPA	Great Basin pocket mouse	15	3	3	6	6														
ZAPR	western jumping mouse	3	7	7	2	2														
Versatility score 19																				
AMGR	northwestern salamander	2		13		6														
AMMA	long-toed salamander	2		13		6														
TAGR	roughskin newt	2		13		6														
BUBO	western toad	2		13		6														
HALE	bald eagle	12	5	11	1	2														
ACGE	northern goshawk	11	6	7	2	4														
LALU	loggerhead shrike	7	3	6	5	5														
DEPE	yellow warbler	8	3	5	5	6														
SCIGR	western gray squirrel	10	6	6	3	4														
CLGA	southern red-backed vole	15	5	6	3	5														
Letter code	Species common name	Life form		No. of plant communities used		No. of stand conditions used		Versatility rating (mean scale)												
		B	F	B	F	B	F	Low-122 species				Medium-154 species				High-82 species				
								3	6	9	12	15	18	21	24	27	30	33	36	39
								B - Breeding; F - Feeding												












Versatility score 20

BAWR	Oregon slender salamander	5	4	4	6	6	
ELCA	black-shouldered kite	11	6	9	4	1	
FAPE	peregrine falcon	4		14		6	
MEGA	wild turkey	5	4	5	5	6	
CYNI	black swift	4		14		6	
EMTR	willow flycatcher	7	4	5	5	6	
TYTY	eastern kingbird	7	4	5	5	6	
PAGA	mountain chickadee	14	6	6	3	5	
PAIN	plain titmouse	14	5	5	5	5	
SIME	western bluebird	14	4	7	3	6	
ICGA	northern oriole	9	4	7	4	5	
CAPS	lesser goldfinch	7	4	5	5	6	
URAR	grizzly bear	15	3	5	6	6	
THMA	western pocket gopher	15	8	8	2	2	

Versatility score 21



HYRE	Pacific treefrog	2		15		6	
STVA	barred owl	14	7	7	3	4	
PIPU	downy woodpecker	13	7	7	3	4	
ANPA	pallid bat	4	5	7	3	6	
MYKE	Keen's myotis	14	6	6	3	6	
LYCA	lynx	5	3	6	6	6	

Versatility score 22












ANFE	clouded salamander	5	5	5	6	6	
LAZO	California mountain kingsnake	5	5	6	5	6	
LAGE	common kingsnake	5	7	7	4	4	
CACAL	California quail	5	9	9	2	2	
TYAL	common barn-owl	14	6	12	2	2	
STELCA	calliope hummingbird	7	5	9	5	3	
PIVI	hairy woodpecker	13	7	8	3	4	
PSMI	bushtit	8	6	6	5	5	
THBE	Bewick's wren	14	7	7	4	4	
DETO	Townsend's warbler	10	6	11	2	3	
SPSA	Cascade golden-mantled ground squirrel	15	4	6	6	6	

Letter code	Species common name	Life form				No. of plant communities used				No. of stand conditions used				Versatility rating (mean scale)											
		B	F	B	F	B	F	B	F	B	F	B	F	Low-122 species			Medium-154 species			High-82 species					



















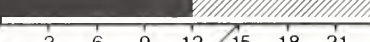
B - Breeding, F - Feeding

 Breeding,  Feeding

Versatility score 23

EUSK	western skink	3	8	9	3	3	
PECA	gray jay	11	7	8	3	5	
POLCA	blue-gray gnatcatcher	11	5	7	5	6	
MELI	Lincoln's sparrow	6	4	14	2	3	
PIEN	pine grosbeak	11	5	9	4	5	
CACAS	Cassin's finch	11	6	8	3	6	
LOXCU	red crossbill	10	8	8	3	4	
CATR	American goldfinch	8	8	9	3	3	
TABR	Brazilian free-tailed bat	4	4	7	6	6	
MAAM	marten	14	8	8	3	4	
MAPE	fisher	14	8	8	3	4	

Versatility score 24







PLVE	western redback salamander	5	7	7	5	5	
SCOC	western fence lizard	5	8	8	4	4	
COLCO	racer	5	10	10	2	2	
COBO	olive-sided flycatcher	10	9	9	3	3	
EMDI	western flycatcher	11	9	9	3	3	
PRSU	purple martin	14	6	9	3	6	
APCO	scrub jay	7	7	8	4	5	
SITCA	red-breasted nuthatch	13	7	10	3	4	
MELME	song sparrow	7	8	11	2	3	
EUCY	Brewer's blackbird	7	9	10	2	3	
SOBE	Pacific water shrew	16	6	6	6	6	
SOCI	masked shrew	15	6	6	6	6	
SCTO	Townsend's mole	15	9	9	3	3	
MEMEP	striped skunk	15	10	10	2	2	
SPLA	golden-mantled ground squirrel	15	5	7	6	6	
TASI	Siskiyou chipmunk	15	6	6	6	6	
CASCAN	beaver	16	2	11	6	5	
ARBAL	white-footed vole	15	6	6	6	6	
MILO	long-tailed vole	15	9	9	3	3	

Letter code	Species common name	Life form				No. of plant communities used				No. of stand conditions used				Versatility rating (mean scale)											
		B	F	B	F	B	F	B	F	3	6	9	12	15	18	21	24	27	30	33	36	39			
										Low-122 species				Medium-154 species				High-82 species							













B - Breeding, F - Feeding

 Breeding,  Feeding









Versatility score 25

AISP	wood duck	14	8	9	3	5	
CAAN	Anna's hummingbird	7	5	11	4	5	
MYTO	Townsend's solitaire	6	6	9	5	5	
DEOC	hermit warbler	10	8	10	3	4	
LACI	hoary bat	11	8	9	3	5	
URCI	gray fox	15	9	9	3	4	

Versatility score 26

BAAT	California slender salamander	5	7	7	6	6	
ELMU	southern alligator lizard	5	7	7	6	6	
CRVI	western rattlesnake	5	7	7	6	6	
ASOT	long-eared owl	11	9	11	3	3	
SPRU	red-breasted sapsucker	13	9	10	3	4	
EMHA	Hammond's flycatcher	11	8	8	4	6	
RECA	ruby-crowned kinglet	10	7	11	3	5	
CAUS	Swainson's thrush	7	8	8	5	5	
VIGI	warbling vireo	11	8	8	5	5	
GLSA	northern flying squirrel	14	8	12	3	3	
SPBEE	California ground squirrel	15	11	11	2	2	
TADO	Douglas' squirrel	10	8	10	4	4	

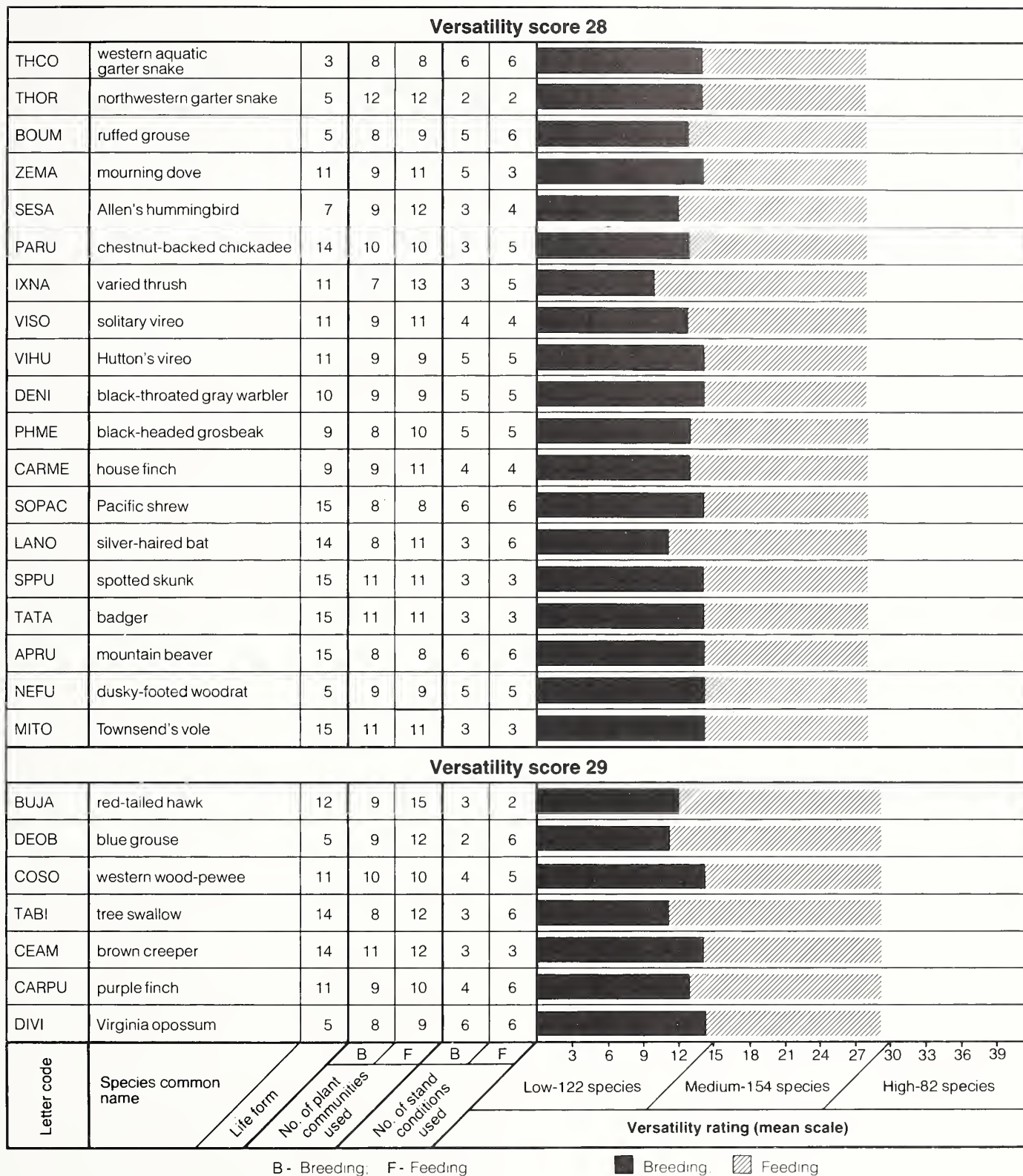
Versatility score 27

PHCO	ring-necked pheasant	5	12	12	1	2	
DRPI	pileated woodpecker	13	7	12	3	5	
TRTR	winter wren	14	10	10	3	4	
RESA	golden-crowned kinglet	10	8	11	3	5	
BOCE	cedar waxwing	9	6	11	5	5	
STVU	European starling	14	9	12	4	2	
OPTO	MacGillivray's warbler	8	7	10	5	5	
MYOCA	California myotis	14	6	11	4	6	



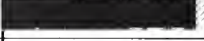
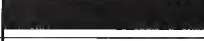
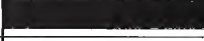
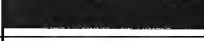




Letter code	Species common name	Life form				No. of plant communities used				No. of stand conditions used				Versatility rating (mean scale)											
		B	F	B	F	B	F	B	F	3	6	9	12	15	18	21	24	27	30	33	36	39			
		Low-122 species				Medium-154 species				High-82 species															

B - Breeding. F - Feeding




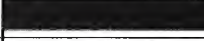

 Breeding.  Feeding



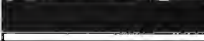





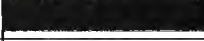





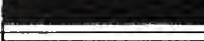
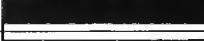


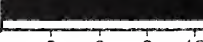
Versatility score 30

FASP	American kestrel	14	10	15	3	2	
AEAC	northern saw-whet owl	14	9	12	3	6	
CAGU	hermit thrush	7	7	13	5	5	
VERU	Nashville warbler	6	9	11	5	5	
PILU	western tanager	10	11	11	3	5	
MYEV	long-eared myotis	14	10	11	4	5	
MYTH	fringed myotis	14	10	12	4	4	
MYYU	Yuma myotis	14	10	10	4	6	
BAAS	ringtail	4	9	9	6	6	
SYBA	brush rabbit	5	8	10	6	6	






























Versatility score 31

CONTE	sharptail snake	5	9	10	6	6	
PIME	gopher snake	5	9	10	6	6	
VECE	orange-crowned warbler	6	11	12	4	4	
DENCO	yellow-rumped warbler	10	9	12	5	5	
PIER	rufous-sided towhee	7	10	12	4	5	



Versatility score 32

CHBO	rubber boa	5	10	10	6	6	
DIPU	ringneck snake	5	9	11	6	6	
CAAU	turkey vulture	4	13	14	3	2	
ACCO	Cooper's hawk	11	9	13	4	6	
ORPI	mountain quail	5	13	13	3	3	
COFA	band-tailed pigeon	11	9	13	4	6	
CYST	Steller's jay	11	11	12	4	5	
COBR	American crow	11	9	13	4	6	
CAPI	pine siskin	11	11	11	4	6	
SOTRO	Trowbridge's shrew	15	11	11	5	5	
MYVO	long-legged myotis	14	10	12	4	6	
LUCA	river otter	16	10	10	6	6	
CEEL	elk	5	10	12	4	6	
TAAM	yellow-pine chipmunk	15	10	10	6	6	
TATO	Townsend's chipmunk	15	10	10	6	6	
ZATR	Pacific jumping mouse	3	11	11	5	5	
ERDO	porcupine	6	10	11	5	6	







Letter code	Species common name	Life form	No. of plant communities used	No. of stand conditions used	B	F	B	F	Versatility rating (mean scale)											
					3	6	9	12	15	18	21	24	27	30	33	36	39			
									Low-122 species				Medium-154 species				High-82 species			

Versatility score 33										
ACST	sharp-shinned hawk	11	9	14	4	6				
COAU	northern flicker	13	10	14	3	6				
TATH	violet-green swallow	14	10	14	3	6				
WIPU	Wilson's warbler	6	10	12	5	6				
COVE	evening grosbeak	11	11	13	4	5				
EPFU	big brown bat	14	10	14	3	6				
LEAM	snowshoe hare	5	10	11	6	6				
Versatility score 34										
CHVA	Vaux's swift	14	10	15	3	6				
PAIL	fox sparrow	7	12	12	5	5				
ZOLE	white-crowned sparrow	7	14	14	3	3				
MOAT	brown-headed cowbird	7	12	14	5	3				
SOMO	dusky shrew	15	11	11	6	6				
NEGI	shrew-mole	15	11	11	6	6				
SCOR	coast mole	15	11	11	6	6				
MYLU	little brown myotis	14	11	14	3	6				
Versatility score 35										
ENES	Ensatina	5	11	12	6	6				
OTKE	western screech-owl	14	11	15	3	6				
BUVI	great horned owl	12	11	15	3	6				
Versatility score 36										
THSI	common garter snake	3	12	12	6	6				
THEL	western terrestrial garter snake	5	12	12	6	6				
GLGN	northern pygmy-owl	14	12	15	3	6				
CORCO	common raven	4	12	15	3	6				
SPPA	chipping sparrow	11	12	15	4	5				
VUVU	red fox	15	13	13	4	6				
URAM	black bear	15	11	15	4	6				
FECO	mountain lion	4	11	14	5	6				
MIOR	creeping vole	15	12	12	6	6				
Letter code	Species common name	Life form	No. of plant communities used	No. of stand conditions used	Versatility rating (mean scale)					
					3 6 9 12 15 18 21 24 27 30 33 36 39					
					Low-122 species Medium-154 species High-82 species					
B - Breeding; F - Feeding  Breeding  Feeding										





B - Breeding; F - Feeding

 Breeding,  Feeding


Versatility score 37

CHMI	common nighthawk	6	14	15	2	6	
SERUF	rufous hummingbird	11	12	14	5	6	
TUMI	American robin	11	13	14	5	5	
PRLO	raccoon	14	12	13	6	6	
MUER	ermine	15	13	13	5	6	
NECI	bushy-tailed woodrat	5	13	13	5	6	




Versatility score 38

ELCO	northern alligator lizard	5	13	13	6	6	
SOVA	vagrant shrew	15	13	13	6	6	
MUVI	mink	14	13	13	6	6	
LYRU	bobcat	4	13	14	5	6	



Versatility score 39

JUHY	dark-eyed junco	5	13	15	6	5	
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Versatility score 40

SCLA	broad-footed mole	15	14	14	6	6	
MUFR	long-tailed weasel	15	14	14	6	6	
ODHE	mule and black-tailed deer	5	13	15	6	6	

Versatility score 42

CALAT	coyote	15	15	15	6	6	
PEMA	deer mouse	15	15	15	6	6	

Letter code	Species common name	Life form				No. of plant communities used				No. of stand conditions used				Versatility rating (mean scale)												
		B	F	B	F	B	F	B	F	B	F	B	F	3	6	9	12	15	18	21	24	27	30	33	36	39
		Low-122 species				Medium-154 species				High-82 species																

B - Breeding; F - Feeding

 Breeding;  Feeding

Appendix 17

Calculation of a wildlife habitat diversity index based on edges

The following discussion and calculations are taken directly from Thomas et al. (1979b, p. 56-58). DI signifies the diversity index.

Inherent Diversity Index

The Inherent Diversity Index is computed as follows:

$$\text{Inherent DI} = \frac{TE_c}{2\sqrt{A \cdot \pi}}$$

where TE_c is the total edge between plant communities in feet found within or on the perimeter of the area under consideration, A is the area expressed in square feet, and π is 3.1416. The Inherent DI is expressed as a percentage increase over perfect simplicity by this process:

Inherent DI, percent = (Inherent DI) 100.

Perfect simplicity may be expressed as $DI = 0$. Perfect simplicity may also be viewed as any delineated area which has no edge present—either internally or on the periphery.

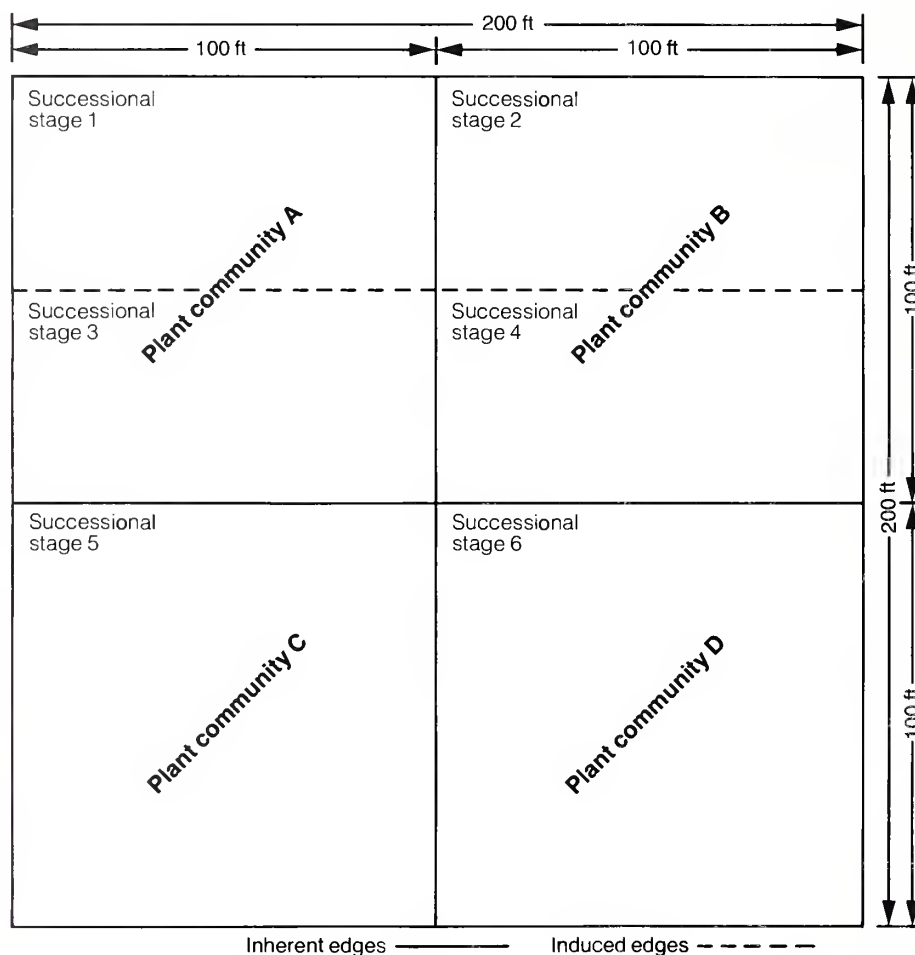
In figure 1, a 200- x 200-ft square of 40,000 ft² is divided into four plant communities of equal size. In this case the perimeter of the area is also inherent edge. The Inherent DI in percent is computed as follows:

$$\begin{aligned} \text{Inherent DI} &= \frac{TE_c}{2\sqrt{A \cdot \pi}} \\ &= \frac{1,200 \text{ ft}}{2\sqrt{(40,000 \text{ ft}^2)(3.1416)}} = 1.69 \end{aligned}$$

Inherent DI, percent = (Inherent DI) 100 = (1.69) 100 = 169%.

The number of plant communities represented is also an important component of inherent diversity. Although the number of plant communities will obviously increase the Inherent DI, percent, an added descriptor showing the number of communities seems appropriate (Patton 1975). The descriptor may be added in parentheses after the Inherent DI, percent. In this case:

Inherent DI, percent (number of communities) or 169%(4).



$$\begin{aligned} \text{Total area in feet} &= (200 \text{ ft})(200 \text{ ft}) = 40,000 \text{ ft}^2 \\ \text{Total inherent edge} &= 1,200 \text{ ft} \\ \text{Total induced edge} &= + 200 \text{ ft} \\ &= 1,400 \text{ ft total edge} \end{aligned}$$

Figure 1.—An area showing plant communities, successional stages [stand conditions], and edges (adapted from Thomas et al. 1979b, p. 57).

In this example the total perimeter represents inherent edge and was included in calculating TE_c . If all or part of the perimeter had not been inherent edge, those parts would not have been used in computing TE_c . In other words, only the portions of the perimeter that are inherent edge are used in deriving TE_c . This is a modification of the approach described by (Patton 1975).

Induced Diversity Index

Induced diversity can be expressed in the same manner:

$$\text{Induced DI} = \frac{TE_s}{2\sqrt{A \cdot \pi}};$$

where TE_s is the total length of the edges (in feet) created between successional stages or [stand] conditions, within plant communities or along their peripheries, for the area under consideration. Then,

Induced DI, percent = Induced DI (100).

Again, consider figure 1. The dotted lines represent Induced edge within plant communities A and B. The TE_s is 200 feet and the total area is 40,000 ft.² The Induced DI in percent is computed as follows:

$$\begin{aligned} \text{Induced DI} &= \frac{TE_s}{2\sqrt{A \cdot \pi}} \\ &= \frac{200 \text{ ft}}{2\sqrt{(40,000 \text{ ft}^2)(3.1416)}} = 0.28 \end{aligned}$$

Induced DI, percent = Induced DI(100) = 0.28(100) = 28%

The number of successional stages or [stand] conditions represented should be added in parentheses after the Induced DI, percent as a further descriptor of induced diversity:

Induced DI, percent (number of successional stages or [stand] conditions) or 28%(6).

Total Diversity Index

Total DI is an index of the combined effects of Inherent DI and Induced DI. This is computed as follows:

$$\text{Total DI} = \frac{TE_{c+s}}{2\sqrt{A \cdot \pi}}, \text{ and}$$

Total DI, percent = (Total DI) (100).

where TE_{c+s} is the total length, in feet, of all inherent and induced edges. This is computed as follows (see fig. 1):

$$\begin{aligned} \text{Total DI} &= \frac{TE_{c+s}}{2\sqrt{A \cdot \pi}} \\ &= \frac{1,400 \text{ ft}}{2\sqrt{(40,000 \text{ ft}^2)(3.1416)}} = 1.97 \end{aligned}$$

Total DI, percent = Total DI(100) = 1.97(100) = 197%

Total DI, percent can be enhanced by showing the contributions of the number of plant communities and the number of successional stages or [stand] conditions as follows:

Total DI, percent (number of communities) (number of stages or [stand] conditions) or 197%(4)(6).

Note that when the expressions of inherent and induced diversity are added they equal total diversity:

Inherent DI, percent	169%
+ Induced DI, percent	+ 28%
Total DI, percent	197%

Therefore, if any two of the indices are known, the third may be derived by appropriate addition or subtraction.

Mapping Codes

The indexes just discussed can be helpful in evaluating the general status of edge and diversity in a planning area. The forest manager may find it desirable to account for the amount and characteristics of individual edges in an area. The following coding system and order is suggested:

Edge type: T = induced;
P = inherent

Community: Community for inherent edges, community for induced edges; the code is the first two letters of the genus and species names (Garrison et al. 1976)

Length: In feet

Average width

of ecotone: In feet

Contrast: 1 to 5

Configuration: A = abrupt;
M = mosaic

Example: T-PSME-1,700-25-5-A

The codes in the example mean that the area has an edge that is induced; it is within the *Douglas fir* community; it is 1,700 feet long and 25 feet wide; the contrast is 5; and it has an abrupt edge.

Appendix 18

Wildlife species that use wildlife trees (snags): Primary or typical occurrence by major habitat (plant community)^{1/}

Letter code	Life form	Species common name	Habitat use	Plant Community													
				Hardwood and shrubby wetland	Coniferous wetland	Grass-forb dry hillides	Mtn. shrubland and chaparral	Deciduous hardwood	Red alder forest	Evergreen hardwood	Mixed coniferous forest (SW Oregon)	Conifer-hardwood forest	Temperate coniferous forest	High temperate coniferous forest	Subalpine forest parks	Lodgepole pine(Cascades)	Shorepine (coast)
AMPHIBIANS																	
ANFE	5	clouded salamander	b f rs						X		X	X	X	X			
BAWR	5	Oregon slender salamander	b f rs									X	X	X	X		
BIRDS																	
AISP	14	wood duck	B	X	X	X		X	X			X	X	X	X		
BUIS	14	Barrow's goldeneye	B	X	X			X			X	X	X	X	X	X	X
BUAL	14	bufflehead	B	X	X				X			X	X	X			
LOCUC	14	hooded merganser	B	X	X				X			X	X	X			
MERME	14	common merganser	B	X	X						X		X	X		X	
CAAU	4	turkey vulture	rs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAHA	12	osprey	B Rs	X	X			X	X	X	X	X	X	X	X	X	
HALE	12	bald eagle	Rs	X	X						X	X	X	X	X	X	X
ACST	11	sharp-shinned hawk	rs	X	X						X	X	X	X	X	X	X
ACCO	11	Cooper's hawk	rs	X	X			X			X	X	X	X			
ACGE	11	northern goshawk	rs	X	X	X		X		X	X	X	X	X	X	X	
BULI	12	red-shouldered hawk	rs	X	X												
BUJA	12	red-tailed hawk	rs	X	X			X	X		X	X	X	X			
AQCH	4	golden eagle	rs		X		X	X		X	X	X	X	X	X		
FASP	14	American kestrel	B rs	X	X	X	X	X					X	X	X	X	X
FACO	11	merlin	rs	X	X			X		X	X	X	X	X	X	X	X
FAPE	4	peregrine falcon	rs	X	X			X						X	X		
TYAL	14	common barn owl	B rs	X	X		X	X	X	X	X	X	X	X	X	X	X
OTKE	14	western screech owl	B rs	X	X		X	X	X	X	X	X	X	X	X	X	X

B - breeding (primary)
b - breeding (typical)

F - feeding (primary)
f - feeding (typical)

Rs - resting/perching (primary)
rs - resting/perching (typical)

X - denotes occurrence
in plant community

^{1/} References used: Anderson 1972; Bohn et al. 1980; Browning 1975b; Carl 1966; Cowan & Guiguet 1965; Harris [in press]; Harrison 1978; Ingles 1965; Jackman & Scott 1975; Jewett 1916; Jewett & Gabrielson 1929; Mannan 1983; Manuwal & Munger 1978; Maser & Franklin 1974; Maser et al. 1981; Scott et al. 1977; Silovsky & Pinto 1974; Verner & Boss 1980; Wight 1974; Zarn 1974b. Appendix adapted from Thomas et al. 1979a.

Letter code	Life form	Species common name	Habitat use	Plant Community													
				Hardwood and shrubby wetland	Coniferous wetland	Grass-forb dry hillsides	Mtn. shrubland and chaparral	Deciduous hardwood	Red alder forest	Evergreen hardwood	Mixed coniferous forest (SW Oregon)	Conifer-hardwood forest	Temperate coniferous forest	High temperate coniferous forest	Subalpine forest parks	Lodgepole pine(Cascades)	Shorepine (coast)
BUVI	12	great horned owl	b rs	X	X	X	X	X	X	X	X	X	X	X		X	X
GLGN	14	northern pygmy owl	B Rs	X	X		X	X	X	X	X	X	X	X	X	X	X
STOC	14	spotted owl	b rs	X	X						X	X	X	X	X		
STVA	14	barred owl	B Rs	X	X						X	X	X	X			
AEAC	14	northern saw-whet owl	B rs	X	X			X	X	X	X	X	X	X	X		
CHVA	14	Vaux's swift	B Rs	X	X			X	X	X	X	X	X	X	X	X	X
CEAL	16	belted kingfisher	Rs	X	X			X	X	X	X	X	X	X	X	X	X
MELE	13	Lewis' woodpecker	B f Rs	X	X		X	X		X	X	X	X	X			
MEFO	13	acorn woodpecker	B Rs				X	X		X		X					
SPRU	13	red-breasted sapsucker	B f Rs	X	X			X	X	X	X	X				X	
SPHTH	13	Williamson's sapsucker	B f Rs								X			X	X	X	
PIPU	13	downy woodpecker	B F Rs	X	X			X	X		X	X					
PIVI	13	hairy woodpecker	B F Rs	X	X				X		X	X	X	X	X	X	X
PIAL	13	white-headed woodpecker	B F Rs					X		X	X	X			X	X	
PITR	13	three-toed woodpecker	B F Rs		X						X			X	X	X	
PIAR	13	black-backed woodpecker	B F Rs		X						X			X	X	X	
COAU	13	northern flicker	B F Rs	X	X		X	X	X	X	X	X	X	X	X	X	
DRPI	13	pileated woodpecker	B F Rs	X	X			X	X	X	X	X	X	X	X	X	X
COBO	10	olive-sided flycatcher	rs	X	X			X			X	X	X	X		X	X
EMHA	11	Hammond's flycatcher	rs		X						X			X	X	X	
EMOB	8	dusky flycatcher	rs				X		X		X			X		X	
EMDI	11	western flycatcher	b rs	X	X			X	X	X	X	X	X	X			
MYCI	14	ash-throated flycatcher	B rs	X			X	X									
TYVE	11	western kingbird	rs	X			X	X	X	X							
TYTY	7	eastern kingbird	rs	X	X			X					X				
PRSU	14	purple martin	B Rs	X	X			X	X		X	X	X	X		X	X
TABI	14	tree swallow	B rs	X	X			X	X		X	X	X	X		X	
TATH	14	violet-green swallow	B	X	X			X	X	X	X	X	X	X	X	X	X
PAAT	14	black-capped chickadee	B	X	X			X	X		X	X	X				
PAGA	14	mountain chickadee	B								X			X	X	X	
PARU	14	chestnut-backed chickadee	B	X	X			X	X	X	X	X	X	X		X	X

B - breeding (primary)
b - breeding (typical)

F - feeding (primary)
f - feeding (typical)

Rs - resting/perching (primary)
rs - resting/perching (typical)

X - denotes occurrence
in plant community

Letter code	Life form	Species common name	Habitat use	Plant Community													
				Hardwood and shrubby wetland	Coniferous wetland	Grass-forb dry hillides	Mtn. shrubland and chaparral	Deciduous hardwood	Red alder forest	Evergreen hardwood	Mixed coniferous forest (SW Oregon)	Conifer-hardwood forest	Temperate coniferous forest	High temperate coniferous forest	Subalpine forest parks	Lodgepole pine(Cascades)	Shorepine (coast)
PAIN	14	plain titmouse	B				X	X				X					
SITCA	13	red-breasted nuthatch	B f Rs		X			X				X	X	X	X	X	X
SICAR	13	white-breasted nuthatch	B f Rs	X	X		X	X				X	X			X	X
SIPY	13	pygmy nuthatch	B f Rs									X	X			X	X
CEAM	14	brown creeper	B f Rs	X	X			X	X	X		X	X	X	X	X	X
THBE	14	Bewick's wren	b rs	X	X		X	X	X								
TRAE	14	house wren	B f Rs	X	X		X	X	X			X					
TRTR	14	winter wren	b	X	X					X		X	X	X	X	X	
SIME	14	western bluebird	B rs	X				X				X	X				
SICU	14	mountain bluebird	B rs									X			X	X	X
STVU	14	European starling	B rs	X	X		X	X	X	X		X	X				X
CARME	9	house finch	b rs	X	X		X	X	X	X		X	X				
MAMMALS																	
DIVI	5	Virginia opossum	B rs	X	X			X	X	X	X	X	X				
ANPA	4	pallid bat	b rs	X	X			X			X		X	X			
EPFU	14	big brown bat	B Rs	X	X			X	X	X	X	X	X	X	X	X	
LANO	14	silver-haired bat	B Rs	X	X			X	X	X	X	X	X	X			
MYOCA	14	California myotis	B Rs	X	X						X	X	X	X		X	
MYEV	14	long-eared myotis	B Rs	X	X			X		X	X	X	X	X	X	X	X
MYKE	14	Keen's myotis	B Rs	X	X								X	X	X	X	
MYLU	14	little brown myotis	B Rs	X	X			X	X	X	X	X	X	X	X	X	X
MYTH	14	fringed myotis	b rs	X	X			X	X	X	X	X	X	X		X	
MYVO	14	long-legged myotis	B Rs	X	X			X	X	X	X	X	X	X		X	
MYYU	14	Yuma myotis	B Rs	X	X			X	X	X	X	X	X	X		X	X
URCI	15	gray fox	b rs	X			X	X	X	X	X	X	X				
URAM	15	black bear	b rs	X	X					X	X		X	X	X	X	X
BAAS	4	ringtail	b rs	X		X	X	X		X	X	X					X
PRLO	14	raccoon	B Rs	X	X	X	X	X	X	X	X	X	X	X			X
MAAM	14	marten	B Rs									X	X	X	X	X	X
MAPE	14	fisher	B Rs	X	X							X	X	X	X	X	
MUER	15	ermine	b f rs	X	X		X	X	X	X		X	X	X	X	X	X

B - breeding (primary)
b - breeding (typical)

F - feeding (primary)
f - feeding (typical)

Rs - resting/perching (primary)
rs - resting/perching (typical)

X - denotes occurrence
in plant community

Letter code	Life form	Species common name	Habitat use	Plant Community													
				Hardwood and shrubby wetland	Coniferous wetland	Grass-forb dry hillides	Mtn. shrubland and chaparral	Deciduous hardwood	Red alder forest	Evergreen hardwood	Mixed coniferous forest (SW Oregon)	Conifer-hardwood forest	Temperate coniferous forest	High temperate coniferous forest	Subalpine forest parks	Lodgepole pine(Cascades)	Shorepine (coast)
MUFR	15	long-tailed weasel	b f rs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SPPU	15	spotted skunk	b rs	X	X		X	X	X	X	X	X	X	X			X
LYRU	4	bobcat	b	X	X		X	X	X	X	X	X	X	X	X	X	X
GLSA	14	northern flying squirrel	B Rs		X						X		X		X		X
SCIGR	10	western gray squirrel	B Rs	X				X		X	X	X	X				
TAAM	15	yellow pine chipmunk	b rs	X	X		X	X	X		X	X	X	X	X	X	
TADO	10	Douglas' squirrel	B Rs		X						X	X	X	X	X	X	X
NECI	5	bushy-tailed woodrat	b rs	X	X		X	X	X	X	X	X	X	X	X	X	X
PEMA	15	deer mouse	b rs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ERDO	6	porcupine	b rs	X	X		X		X		X	X	X	X		X	X

B - breeding (primary)
b - breeding (typical)




F - feeding (primary)
f - feeding (typical)

Rs - resting/perching (primary)
rs - resting/perching (typical)


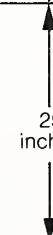
X - denotes occurrence
in plant community



Appendix 19

Wildlife species that use cavities – recommended d.b.h. and tree height for optimum nesting opportunity ^{1/}

Letter code	Life form	Species	Suggested size classes suitable for nesting (inches d.b.h.)	Minimum nest tree height (feet)				Types of cavities used				
		¹ Primary excavators in soft wood ² Primary excavators in sound wood ^x Denotes occurrence only		10 feet	20 feet	30 feet	40 feet	Excavates cavities usually in sound wood	Excavates cavities usually in soft decayed wood	Occupies cavities made by other species	Occupies "natural" cavities created by decay, etc.	Occupies space under loose bark
PAAT	14	black-capped chickadee ¹	9 inches 	X					X	X	X	
PAGA	14	mountain chickadee ¹		X					X	X	X	
PARU	14	chestnut-backed chickadee ¹		X					X	X	X	
PIPU	13	downy woodpecker ¹	11 inches	X				X	X			
SPRU	13	red-breasted sapsucker ²			X			X				
PIVI	13	hairy woodpecker ¹			X				X			
PIAL	13	white-headed woodpecker ¹		X					X			
MYCI	14	ash-throated flycatcher			X					X	X	
PRSU	14	purple martin		X						X	X	
TABI	14	tree swallow			X					X	X	
TATH	14	violet-green swallow			X					X		
PAIN	14	plain titmouse		X						X	X	
CEAM	14	brown creeper			X						X	X
TRAE	14	house wren		X						X	X	
SIME	14	western bluebird		X						X	X	
SICU	14	mountain bluebird		X						X	X	
STVU	14	European starling		X						X	X	
CARME	9	house finch		X						X	X	
MUER	15	ermine		X						X	X	
TAAM	15	yellow-pine chipmunk		X						X	X	
PEMA	15	deer mouse		X						X	X	X
BUAL	14	bufflehead		X						X	X	
LOCUC	14	hooded merganser		X						X	X	
FASP	14	American kestrel			X					X	X	
OTKE	14	western screech-owl			X					X	X	
GLGN	14	northern pigmy-owl				X				X	X	

^{1/} Adapted from Thomas et al. (1979a).

Letter code	Life form	Species	Suggested size classes suitable for nesting (inches d.b.h.)	Minimum nest tree height (feet)				Types of cavities used				
		¹ Primary excavators in soft wood ² Primary excavators in sound wood ^x Denotes occurrence only		10 feet	20 feet	30 feet	40 feet	Excavates cavities usually in sound wood	Excavates cavities usually in soft decayed wood	Occupies cavities made by other species	Occupies "natural" cavities created by decay, etc.	Occupies space under loose bark
AEAC	14	northern saw-whet owl	 17 inches		X					X	X	
MELE	13	Lewis' woodpecker ¹				X	X		X	X		
MEFO	13	acorn woodpecker ²				X	X	X				
SPHTH	13	Williamson's sapsucker ²			X			X				
PITR	13	three-toed woodpecker ²			X			X				
PIAR	13	black-backed woodpecker ²		X				X				
COAU	13	northern flicker ¹		X					X	X	X	
SITCA	13	red-breasted nuthatch ¹			X				X	X		
SICAR	13	white-breasted nuthatch ¹			X				X	X		
SIPY	13	pygmy nuthatch ¹				X			X			
ANPA	4	pallid bat			X					X	X	X
EPFU	14	big brown bat			X					X	X	X
LANO	14	silver-haired bat			X					X	X	X
MYOCA	14	California myotis		X						X	X	X
MYEV	14	long-eared myotis		X						X	X	X
MYKE	14	Keen's myotis		X						X	X	X
MYLU	14	little brown myotis		X						X	X	X
MYTH	14	fringed myotis		X						X	X	X
MYVO	14	long-legged myotis		X						X	X	X
MYYU	14	Yuma myotis		X						X	X	X
MAAM	14	marten			X					X	X	
MUFR	15	long-tailed weasel		X							X	
GLSA	14	northern flying squirrel			X					X	X	
SCIGR	10	western gray squirrel			X					X	X	
TADO	10	Douglas' squirrel			X					X	X	
NECI	5	bushy-tailed woodrat		X						X	X	
AISP	14	wood duck	 25 inches	X						X	X	
BUIS	14	Barrow's goldeneye		X						X	X	
MERME	14	common merganser		X							X	
TYAL	14	common barn-owl			X					X	X	
BUVI	12	great horned owl				X				X	X	

Letter code	Life form	Species	Suggested size classes suitable for nesting (inches d.b.h.)	Minimum nest tree height (feet)				Types of cavities used				
		¹ Primary excavators in soft wood ² Primary excavators in sound wood x Denotes occurrence only		10 feet	20 feet	30 feet	40 feet	Excavates cavities usually in sound wood	Excavates cavities usually in soft decayed wood	Occupies cavities made by other species	Occupies "natural" cavities created by decay, etc.	Occupies space under loose bark
STOC	14	spotted owl	 25 inches			X					X	
STVA	14	barred owl				X					X	
CHVA	14	Vaux's swift					X			X	X	
DRPI	13	pileated woodpecker ²					X	X				
DIVI	5	Virginia opossum		X							X	
BAAS	4	ringtail			X						X	
PRLO	14	raccoon		X							X	
MAPE	14	fisher				X					X	
SPPU	15	spotted skunk		X							X	
ERDO	6	porcupine			X						X	
URCI	15	gray fox	 29 inches	X							X	
URAM	15	black bear		X							X	
LYRU	4	bobcat		X							X	

Appendix 20

Wildlife use of downed logs by log class for cover, feeding, breeding, and resting ^{1/}

Letter code	Life form	Species	Cover					Feeding					Breeding					Resting/Other ^{2/}				
			Log Classes ^{3/}					Log Classes					Log Classes					Log Classes				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
		AMPHIBIANS																				
AMGR	2	northwestern salamander		1	1	1		1	1	1	1							1	1	1		
AMMA	2	long-toed salamander		1	1	1		1	1	1	1							1	1	1		
DIEN	2	Pacific giant salamander		1	1	1		1	1	1	1							1	1	1		
ANFE	5	clouded salamander	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
ANFL	5	black salamander	2	2	2			2	2	2	2		2	2	2			2	2	2		
BAAT	5	California slender salamander	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
BAWR	5	Oregon slender salamander	1	1	1	1		1	1	1	1			1	1	1		1	1	1	1	
ENES	5	Ensatina	1	1	1	1		1	1	1	1			1	1	1		1	1	1	1	
PLDU	3	Dunn's salamander		1	1	1		1	1	1	1							1	1	1		
PLEL	4	Del Norte salamander		2	2	2		2	2	2	2		2	2	2			2	2	2		
PLLA	4	Larch Mountain salamander		2	2	2		2	2	2	2		2	2	2			2	2	2		
PLEST	4	Siskiyou Mountains salamander		2	2	2		2	2	2	2		2	2	2			2	2	2		
PLVA	3	Van Dyke's salamander	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
PLVE	5	western redback salamander	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
BUBO	2	western toad		2	2			1	1	1								1	1	2		
HYRE	2	Pacific treefrog	2	2	2			1	1	1	1							1	1	1	2	
ASTR	2	tailed frog	2	2	2			1	1	1								1	1	1		
		REPTILES																				
CHPI	3	painted turtle																1	1			
CLMA	3	western pond turtle																1	1			
ELCO	5	northern alligator lizard	1	1	1			1	1	1	1		1	1	1	1		1	1	1		
ELMU	5	southern alligator lizard	1	1	1			1	1	1	1							1	1	1		
SCEGR	5	sagebrush lizard	2	2	2			1	1	1	1							1	1			
SCOC	5	western fence lizard	1	1	1			1	1	1	1							1	1	1		
EUSK	3	western skink			1			1	1	1				1	1	1		1	1			
CHBO	5	rubber boa		1	1	1		1	1	1			1	1	1	1		1	1	1		
CONTE	5	sharp-tail snake		1	1	1		1	1	1				1	1	1		1	1			
DIPU	5	ringneck snake			1	1		1	1	1				1	1	1			1	1		
LAGE	5	common kingsnake	2	2	2			2	2	2								2	2	2		
LAZO	5	California mountain kingsnake	2	2	2			2	2	2				1	1			2	2	2		
PIME	5	gopher snake	2	2				2	2	2								2	2			
THCO	3	western aquatic garter snake	2	2				2	2					2	2			2	2			

1 = Preferred habitat component

2 = Commonly used habitat component

Letter code	Life form	Species	Cover					Feeding					Breeding					Resting/Other ^{2/}				
			Log Classes ^{3/}					Log Classes					Log Classes					Log Classes				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
THEL	5	western terrestrial garter snake	2	2	2				2	2	2				1	1		2	2			
THOR	5	northwestern garter snake	2	2	2			2	2	2				2	2	2		2	2	2		
THSI	3	common garter snake	2	2	2				1	1	1				1	1		2	2			
CRVI	5	western rattlesnake	1	1	1			1	1	1	1			2	2	2		1	1	1		
		BIRDS																				
AISP	14	wood duck											2	2				2	2	2		
BUIS	14	Barrow's goldeneye											2	2								
MERME	14	common merganser											2	2								
CAAU	4	turkey vulture											1	1				2	2	2		
ACST	11	sharp-shinned hawk						2	2	2												
ACCO	11	Cooper's hawk						2	2	2												
ACGE	11	northern goshawk						2	2	2												
DECA	5	spruce grouse	2	2	2								1	1	1			1	1	1		
DEOB	5	blue grouse	2	2	2													2	2	2		
BOUM	5	ruffed grouse	2	2	2								1	1	1	1		1	1	1		
CACAL	5	California quail	2	2	2								2	2				2	2			
STVA	14	barred owl						2	2	2												
PHNU	6	common poorwill													1	1	1		1	1	1	
MELE	13	Lewis' woodpecker						1														
MEFO	13	acorn woodpecker						2	2													
PIVI	13	hairy woodpecker						1	1	1												
PIAL	13	white-headed woodpecker						2	2	2												
PITR	13	three-toed woodpecker						1	1													
PIAR	13	black-backed woodpecker						2	2	2												
COAU	13	northern flicker						1	1													
DRPI	13	pileated woodpecker						1	1	1												
CYST	11	Steller's jay						2	2	2												
PAGA	14	mountain chickadee											2	2	2			2	2	2		
SITCA	13	red-breasted nuthatch						1	1	1				2	2			2	2	2		
SICAR	13	white-breasted nuthatch						2						2	2			2	2			
SiPY	13	pygmy nuthatch						2						2	2			2				
THBE	14	Bewick's wren	2	2				1	1	1			1	1				1	1			
TRAE	14	house wren	1	1	1			1	1	1			2	2				1	1			
TRTR	14	winter wren	1	1	1			1	1	1			1	1				1	1			
MYTO	6	Townsend's solitaire	2	2				2	2				1	1				1	1			
PICH	7	green-tailed towhee	2	2				2	2	2												
PIER	7	rufous-sided towhee	1	1	1			1	1	1	1	1	1	1				1	1	1		
MELME	7	song sparrow	2	2	2			2	2	2			2	2				2	2			
JUHY	5	dark-eyed junco	2	2				2	2				2	2	2			2	2			

1 = Preferred habitat component

2 = Commonly used habitat component

See footnotes at end of appendix

Appendix 20

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Letter code	Life form	Species	Cover					Feeding					Breeding					Resting/Other ²				
			Log Classes ³					Log Classes					Log Classes					Log Classes				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
		MAMMALS																				
DIVI	5	Virginia opossum	1	1	1			1	1	1			1	1	1			1	1	1		
SOBE	16	Pacific water shrew	1	1	1			1	1				1	1	1			1	1	1		
SOCI	15	masked shrew	2	2	2	2			2	2	2	2		2	2	2		2	2	2		
SOMO	15	dusky shrew		1	1	1			1	1	1	1		1	1	1		1	1	1		
SOPAC	15	Pacific shrew		1	1	1			1	1	1	1		1	1	1		1	1	1		
SOPAL	16	water shrew	2	2	2	2				1	1			1	1	1		1	1	1	1	
SOTRO	15	Trowbridge's shrew	1	1	1				1	1				1	1	1		1	1	1		
SOVA	15	vagrant shrew		2	2	2			2	2	2			2	2	2		2	2	2		
NEGI	15	shrew-mole	1	1	1				1	1	1	1		1	1	1		1	1	1		
SCLA	15	broad-footed mole									2	2				2	2				2	2
SCOR	15	coast mole									2	2				2	2				2	2
SCTO	15	Townsend's mole									2	2				2	2				2	2
CALAT	15	coyote	2	2	2			2	2	2	2			1	1			1	1	1		
URCI	15	gray fox	1	1	1			1	1	1	1	1		1	1	1		1	1	1		
VUVU	15	red fox	2	2	2				2	2	2	2			1	1		1	1	1		
URAM	15	black bear	2	2						2	2	2			1	1			1	1	1	
URAR	15	grizzly bear								2	2	2								2	2	
PRLO	14	raccoon	2	2	2													2	2	2		
GUGU	5	wolverine	2	2										1	1	1		1	1	1		
LUCA	16	river otter						2														
MAAM	14	marten	1	1	1			1	1	1	1	1		1	1	1		1	1	1		
MAPE	14	fisher	1	1	1			1	1	1	1	1		1	1	1		1	1	1		
MEMEP	15	striped skunk	2	2	2			2	2	2	2	2		2	2	2		2	2	2		
MUER	15	ermine	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1		
MUFR	15	long-tailed weasel	2	2	2			1	1	1	1	1	1	1	1	1	1	1	1	1		
MUVI	14	mink	2	2	2			2	2	2	2	2	1	1	1	1		1	1	1		
SPPU	15	spotted skunk	2	2	2			1	1	1	1	1	1	1	1	1	1	1	1	1		
TATA	15	badger							2	2	2											
FECO	4	mountain lion	2	2	2			2	2	2				2	2	2		2	2	2		
LYCA	5	lynx	2	2	2									1	1	1						
LYRU	4	bobcat	1	1	1			1	1	1				1	1	1		1	1	1		
ODHE	5	mule deer, black-tailed deer	2	2							2									2	2	
ODVILE	5	Columbian white-tailed deer	2	2														2	2			
APRU	15	mountain beaver	2	2	2						1	1				1	1	1	1	1	1	
GLSA	14	northern flying squirrel						2	2	2	2	2										
MAOL	4	Olympic marmot									2	2				2	2				2	2
SCIGR	10	western gray squirrel									2	2										
SPLA	15	golden-mantled ground squirrel	1	1	1				1	1					1	1		1	1			

1 = Preferred habitat component

2 = Commonly used habitat component

Letter code	Life form	Species	Cover					Feeding					Breeding					Resting/Other ^{2/}				
			Log Classes ^{3/}					Log Classes					Log Classes					Log Classes				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
SPSA	15	Cascade golden-mantled ground squirrel	1	1	1				1	1					1	1		1	1			
TAAM	15	yellow-pine chipmunk	2	2	2			2	2	2	2	2			2	2	2	2	2	2	2	
TASI	15	Siskiyou chipmunk	1	1	1			1	1	1	1	1			1	1	1	1	1	1	1	
TATO	15	Townsend's chipmunk	1	1	1			1	1	1	1	1			1	1	1	1	1	1	1	
TADO	10	Douglas squirrel	2	2	2				2	2	2											
NECI	5	bushy-tailed woodrat	1	1	1			1	1	1			1	1	1			1	1	1		
NEFU	5	dusky-footed woodrat	2	2	2			2	2	2			2	2	2			2	2	2		
PEMA	15	deer mouse	1	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1	1	
PETRU	4	piñon mouse	1	1	1			1	1	1					1	1	1		1	1	1	
ARBAL	15	white-footed vole			1	1					1						1			1	1	
CLCA	15	western red-backed vole	1	1	1	1	1			1	1	1			1	1	1	1	1	1		
CLGA	15	southern red-backed vole	1	1	1	1	1			1	1	1			1	1	1	1	1	1		
MILO	15	long-tailed vole		2	2	2				2	2	2			1	1	1	1	1	1		
MIMO	15	montane vole													2	2	2			2	2	
MIOR	15	creeping vole	2	2	2					1	1	1			1	1	1	1	1	1		
PHIN	15	heather vole	2	2	2	2					1	1							1	1	1	
SYBO	15	northern bog lemming							2	2	2				2	2			2	2	2	
ZAPR	3	western jumping mouse							2	2	2											
ZATR	3	Pacific jumping mouse							2	2	2											
ERDO	6	porcupine	2	2	2				1	1	1				1	1	1	1	1	1		
OCPR	4	pika	2	2										2	2			2	2			
LEAM	5	snowshoe hare	2	2	2						2			2	2	2		2	2	2		
SYNU	15	Nuttall's cottontail	2	2											2	2		2	2			

1 = Preferred habitat component
2 = Commonly used habitat component

^{1/}References used include: Burt and Grossenheider 1976, Dueser and Shugart 1978, Ingles 1965, Larrison 1976, Maser et al. 1981, Peterson 1961, Stebbins 1954a and 1966, Terres 1980, and Walker 1975.

^{2/}Other uses include sites for drumming, dusting, preening, sunning, bedding, lookout, and bridges.

^{3/}See Table 1 in Chapter 8, Dead and Down Woody material for a description of log decomposition classes.

Appendix 21

Selected references on bald eagles in Oregon and Washington and management guidelines from other regions

References ^{1/}	Nesting populations	Nesting habitat use	Wintering populations	Wintering habitat use	Communal roosting	Nest disturbance effects	Winter disturbance effects	Food and foraging habits	Habitat management guidelines
<u>Oregon and Washington References</u>									
Allen 1979	*	*	*	*					
Anderson and Bruce 1980		*						*	
Anthony and Isaacs 1981		*				*			*
Anthony et al. 1982		*		*					*
Bill and Ransom 1980		*							*
Goold 1981									*
Grubb 1976	*	*				*			*
Grubb 1980	*	*				*			*
Grubb et al. 1975	*								
Hansen and Bartelme 1980			*	*	*		*	*	*
Hansen et al. 1980				*	*		*		
Isaacs et al. 1983	*								
Isaacs and Silovsky 1981									*
Keister 1981			*	*	*				
Knight et al. 1981			*						
Knight 1981			*	*	*		*	*	
Nash et al. 1980	*							*	
Nature Conservancy 1976			*	*			*	*	*
Newman et al. 1977	*					*			
Opp 1980	*		*						
Ralph 1980			*				*	*	
Retfalvi 1965	*	*				*		*	
Retfalvi 1970	*							*	
Russell 1980			*				*		
Servheen 1975			*	*	*			*	
Servheen and English 1979			*					*	
Skagen 1980							*	*	
Stalmaster 1976			*	*	*		*	*	
Stalmaster 1980			*	*	*		*	*	*
Stalmaster 1981a				*	*		*	*	
Stalmaster 1981b			*				*	*	
Stalmaster and Gessaman 1982								*	
Stalmaster and Newman 1978							*		*
Stalmaster and Newman 1979				*	*				*
Stalmaster et al. 1979			*					*	
U.S. Fish & Wildlife Service 1977									*
U.S. Fish & Wildlife Service 1981									*
Young 1980						*			

^{1/} See appendix references cited

References ^{1/}	Nesting populations	Nesting habitat use	Wintering populations	Wintering habitat use	Communal roosting	Nest disturbance effects	Winter disturbance effects	Food and foraging habits	Habitat management guidelines
<u>Other Management References</u>									
Call 1978									*
Call 1979									*
Forbis et al. 1977		*		*		*		*	*
Fyfe and Olendorff 1976						*			
Lehman 1979		*							*
Mathisen et al. 1977									*
Olendorff et al. 1980									*
Snow 1973b		*		*	*	*	*	*	*
Spencer 1976			*	*	*			*	
Steenhof 1978			*	*	*		*	*	*
Steenhof et al. 1980				*	*				
U.S. Army Corps of Engineers 1979	*	*	*	*	*	*	*	*	
<u>Bibliographies</u>									
Allen et al. 1980	*	*	*	*	*	*	*	*	*
Knight 1979	*	*	*	*	*	*	*	*	*
Lincer et al. 1979	*	*	*	*	*	*	*	*	*

^{1/} See appendix references cited

Appendix 22

Selected references for wildlife, fish and some estuarine invertebrates occurring in western Oregon and Washington

Letter code	Life form	Species common name	Selected references
VERTEBRATES			
AMPHIBIANS			
AMGR	2	northwestern salamander	Nussbaum et al. 1983, Snyder 1963, Stebbins 1954a, Taylor 1977
AMMA	2	long-toed salamander	Anderson 1967, Nussbaum et al. 1983, Stebbins 1966
DICO	1	Cope's giant salamander	Antonelli et al. 1972, Nussbaum 1970 and 1972, Stebbins 1954a
DIEN	2	Pacific giant salamander	Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1954a
RHOL	2	Olympic salamander	Anderson 1968, Jones and Stokes 1980, Nussbaum et al. 1983, Nussbaum and Tait 1977
ANFE	5	clouded salamander	Nussbaum et al. 1983, McKenzie 1970, Stelmock and Harestad 1979
ANFL	5	black salamander	Lynch 1974, Nussbaum et al. 1983, Stebbins 1966, Storm 1974b
BAAT	5	California slender salamander	Hendrickson 1954, Nussbaum et al. 1983, Stebbins 1966
BAWR	3	Oregon slender salamander	Friberg 1954, Nussbaum et al. 1983, Stebbins 1949, Storm 1953
ENES	5	Ensatina	Altig and Brodie 1971, Gnaedinger 1948, Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1954b
PLDU	3	Dunn's salamander	Brodie 1970, Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1966
PLEL	4	Del Norte salamander	Brodie 1970, Bury and Johnson 1965, Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1966
PLLA	4	Larch Mountain salamander	Brodie 1970, Burns 1964, Nussbaum et al. 1983, Storm 1974b
PLEST	4	Siskiyou Mountains salamander	Brodie 1970 and 1971, Jones and Stokes 1980, Nussbaum et al. 1983
PLVA	3	Van Dyke's salamander	Brodie 1970, Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1954a
PLVE	5	western redback salamander	Dumas 1956, Nussbaum et al. 1983, Peacock and Nussbaum 1973, Stebbins 1966
TAGR	2	roughskin newt	Pimentel 1952, Nussbaum et al. 1983, Stebbins 1954a, White 1977
BUBO	2	western toad	Nussbaum et al. 1983, Schonberger 1945, Stebbins 1966
HYRE	2	Pacific treefrog	Nussbaum et al. 1983, Stebbins 1954a and 1966
ASTR	2	tailed frog	Nussbaum et al. 1983, Metter 1964 and 1968, Stebbins 1954a and 1966
RAAU	2	red-legged frog	Altig and Dumas 1972, Dumas 1966, Nussbaum et al. 1983, Stebbins 1966, Storm 1960
RABO	2	foothill yellow-legged frog	Jones and Stokes 1980, Nussbaum et al. 1983, Stebbins 1954a, Zweifel 1955 and 1968
RANCA	2	Cascade frog	Altig and Dumas 1971, Briggs and Storm 1970, Dumas 1966, Nussbaum et al. 1983
RACAT	1	bullfrog	Nussbaum et al. 1983, Stebbins 1954a and 1966
RAPR	2	spotted frog	Dumas 1966, Nussbaum et al. 1983, Stebbins 1966, Storm 1974b

Letter code	Life form	Species common name	Selected references
REPTILES			
CHPI	3	painted turtle	Ernst 1971, Nussbaum et al. 1983, Stebbins 1966
CLMA	3	western pond turtle	Bury 1970, Nussbaum et al. 1983, Stebbins 1954 <u>a</u>
ELCO	5	northern alligator lizard	Jones and Stokes 1980, Lais 1976 <u>a</u> , Nussbaum et al. 1983, Vitt 1973
ELMU	5	southern alligator lizard	Lais 1976 <u>b</u> , Nussbaum et al. 1983, Stebbins 1954 <u>a</u>
SCEGR	5	sagebrush lizard	Marcellini and Mackey 1970, Nussbaum et al. 1983, Tinkle 1973, Woodbury and Woodbury 1945
SCOC	5	western fence lizard	Davis and Verbeek 1972, Marcellini and Mackey 1970, Nussbaum et al. 1983
EUSK	3	western skink	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> and 1966
CHBO	5	rubber boa	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> , Stewart 1977
COLCO	5	racer	Brown and Parker 1976, Nussbaum et al. 1983, Stickel and Cope 1947, Wilson 1978
CONTE	5	sharptail snake	Cook 1960, Nussbaum et al. 1983, Stebbins 1966, Storm 1966
DIPU	5	ringneck snake	Nussbaum et al. 1983, Stebbins 1966, USDA 1981 <u>a</u>
LAGE	5	common kingsnake	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> , Storm 1974 <u>a</u> and 1974 <u>b</u>
LAZO	5	California mountain kingsnake	Nussbaum et al. 1983, Stebbins 1966, Storm 1974 <u>b</u> , Zweifel 1974
PIME	5	gopher snake	Nussbaum et al. 1983, Rickard 1974, Stebbins 1966
THCO	3	western aquatic garter snake	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> and 1966
THEL	5	western terrestrial garter snake	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> and 1966
THOR	5	northwestern garter snake	Nussbaum et al. 1983, Rickard 1974, Stebbins 1954 <u>a</u> and 1966
THSI	3	common garter snake	Carpenter 1952, Fitch 1965, Nussbaum et al. 1983, Stebbins 1954 <u>a</u>
CRVI	5	western rattlesnake	Nussbaum et al. 1983, Stebbins 1954 <u>a</u> , Storm 1974 <u>b</u>
BIRDS			
GAIM	3	common loon	Gabrielson and Jewett 1970, McIntyre and Mathisen 1977, Palmer 1976, Salo 1975
POPO	3	pied-billed grebe	Chabreck 1963, Faaborg 1976, Glover 1953
POAU	3	horned grebe	Faaborg 1976, Gabrielson and Jewett 1970, Harrison 1978, McAllister 1964, Storer 1969
PODGR	3	red-necked grebe	Gabrielson and Jewett 1970, Harrison 1978, Kebbe 1958, McAllister 1964, Terres 1980
PODNI	3	eared grebe	Faaborg 1976, Harris and Harris 1979, McAllister 1955, 1958, and 1964
AEOC	3	western grebe	Gabrielson and Jewett 1970, Harris and Harris 1979, Lawrence 1950, Munro 1941, Nero et al. 1958
PHAU	3	double-crested cormorant	Gabrielson and Jewett 1970, Harrison 1978, Lack 1945, Palmer 1976, Van Tets 1959
BOLE	3	American bittern	Gabrielson and Jewett 1970, Harrison 1978, Mauseley 1939, Vesall 1940
ARHE	12	great blue heron	Jackman and Scott 1975, Krebs 1974, Salo 1975, Urhahn 1968
CASAL	7	great egret	Eaton 1975, Gabrielson and Jewett 1970, Palmer 1976, Wiese 1976, Yull 1972
BUST	7	green-backed heron	Campbell 1972, Eaton 1975, Gladson 1981, Larrison 1940
NYNY	7	black-crowned night-heron	Allen and Mangels 1940, Harris and Harris 1979, Henny 1972, Nickell 1966
CYCO	3	tundra swan	Bellrose 1976, Eaton 1975, Gabrielson and Jewett 1970, Johnsgard 1975 <u>a</u> , Sladen and Cochran 1969
CYBU	3	trumpeter swan	Alcorn 1978, Eaton 1975, Harrison 1978, Terres 1980
ANAL	3	greater white-fronted goose	Bellrose 1976, Johnsgard 1975 <u>a</u> , Owen 1972 and 1976, Timm and Dau 1979
CHCA	3	snow goose	Bellrose 1976, Harris and Harris 1979, Johnsgard 1975 <u>a</u> , Palmer 1976

Letter code	Life form	Species common name	Selected references
BIRDS			
BRBE	3	brant	Barry 1956, Eaton 1975, Einarsen 1965, Hout 1967
BRCA	3	Canada goose	Eaton 1975, Rienecker 1971, Will and Crawford 1970, Woolington 1979
AISP	14	wood duck	Bellrose et al. 1964, Heusmann et al. 1977, Jewett et al. 1953, Trefethen 1966
ANCR	3	green-winged teal	Bellrose 1976, Gabrielson and Jewett 1970, Johnsgard 1975a, Moisan et al. 1967
ANPL	3	mallard	Anderson and Henny 1972, Pospahala et al. 1974
ANAC	3	northern pintail	Derrickson 1975 and 1978, Harris and Harris 1979, Smith 1968
ANDI	3	blue-winged teal	Bellrose 1976, Swanson et al. 1974, Wheeler 1965
ANCY	3	cinnamon teal	Bellrose 1976, Harris and Harris 1979, Johnsgard 1975a, Spencer 1953
ANCL	3	northern shoveler	Bellrose 1976, Harris and Harris 1979, Johnsgard 1975a, Poston 1974
ANST	3	gadwall	Harrison 1978, Jensen 1949, Serie and Swanson 1976
ANPE	3	Eurasian wigeon	Eaton 1975, Gabrielson and Jewett 1970, Hasbrouk 1944, Johnsgard 1975a
ANAAM	3	American wigeon	Bellrose 1976, Gabrielson and Jewett 1970, Harris and Harris 1979, Harrison 1978, Johnsgard 1975a
AYVA	3	canvasback	Bellrose 1976, Eaton 1975, Johnsgard 1975a, Olson 1964
AYAM	3	redhead	Bellrose 1976, Harris and Harris 1979, Johnsgard 1975a, Olson 1964
AYCO	3	ring-necked duck	Bellrose 1976, Harris and Harris 1979, Johnsgard 1975a, Marshall and Duebbert 1965
AYMA	3	greater scaup	Gehrman 1951, Johnsgard 1975a, Palmer 1976
AYAF	3	lesser scaup	Bellrose 1976, Gehrman 1951, Harris and Harris 1979, Johnsgard 1975a
HIHI	3	harlequin duck	Bellrose 1976, Eaton 1975, Johnsgard 1975a, Salo 1975
CLHY	3	oldsquaw	Alcorn 1978, Alison 1975, Eaton 1975, Harrison 1978
BUCL	14	common goldeneye	Bellrose 1976, McLaren 1962, Munro 1939
BUIS	14	Barrow's goldeneye	Jackman and Scott 1975, Munro 1939, Myres 1957
BUAL	14	bufflehead	Bellrose 1976, Erskine 1961, Munro 1942
LOCUC	14	hooded merganser	Bellrose 1976, Eaton 1975, Johnsgard 1975a, Morse et al. 1969
MERME	14	common merganser	Harris and Harris 1979, Johnsgard 1975a, Palmer 1976, White 1957
OXJA	3	ruddy duck	Barcelona 1976, Harris and Harris 1979, McKnight 1974, Siegfried 1976
CAAU	4	turkey vulture	Brown and Amadon 1968, Coles 1938, Tyler 1937, Work and Wool 1942
PAHA	12	osprey	Eaton 1975, Jackman and Scott 1975, Lind 1976, Zarn 1974b
ELCA	11	black-shouldered kite	Dixon et al. 1957, Eisenmann 1971, Harris and Harris 1979, Hawbecker 1942
HALE	12	bald eagle	Eaton 1975, Snow 1973b, Spencer 1976, Stahlmaster 1976 and 1980, Thelander 1973
CICY	5	northern harrier	Call 1978, Clark and Ward 1974, Craighead and Craighead 1969, Gabrielson and Jewett 1970, Rees 1976
ACST	11	sharp-shinned hawk	Eaton 1975, Jackman and Scott 1975, Jones 1979, Reynolds 1975, Reynolds et al. 1982
ACCO	11	Cooper's hawk	Harris and Harris 1979, Henny and Wight 1972, Jackman and Scott 1975, Reynolds 1975, Reynolds et al. 1982
ACGE	11	northern goshawk	Eaton 1975, Jackman and Scott 1975, Jones 1979, Reynolds 1975, Reynolds et al. 1982
BULI	12	red-shouldered hawk	Harris and Harris 1979, Stewart 1949, U.S. Dept of Agriculture 1981b, Wiley 1975
BUJA	12	red-tailed hawk	Harris and Harris 1979, Henny and Wight 1972, Jackman and Scott 1975, Wiley 1975

Letter code	Life form	Species common name	Selected references
BIRDS			
BULA	5	rough-legged hawk	Call 1979, Schnell 1968 and 1969, Springer 1975, Zarn 1975
AQCH	4	golden eagle	Eaton 1975, Jackman and Scott 1975, Olendorff 1976, Snow 1973a
FASP	14	American kestrel	Call 1979, Collopy 1977, Henny 1977, McLaren 1962, Sanderson et al. 1980, Scott et al. 1977
FACO	11	merlin	Eaton 1975, Fox 1971, Johnson and Coble 1967, Trimble 1975a
FAPE	4	peregrine falcon	Beebe 1974, Eaton 1975, Snow 1972, Thelander 1976
FARU	4	gyrfalcon	Beebe 1974, Brown and Amadon 1968, Cade 1960, Eaton 1975
FAME	4	prairie falcon	Denton 1976, Garrett and Mitchell 1973, Harris and Harris 1979, Snow 1974
PHCO	5	ring-necked pheasant	Crouse 1941, Eklund 1942, Harrison 1978, Masson and Mace 1962
DECA	5	spruce grouse	Haas 1974, Jackman and Scott 1975, Pendergast and Boag 1971
DEOB	5	blue grouse	Bendell and Elliott 1966 and 1967, Harris and Harris 1979, Jackman and Scott 1975, Zwickel 1982
LALE	4	white-tailed ptarmigan	Braun 1980, Braun and Rogers 1971, Choate 1963, Johnsgard 1975b
BOUM	5	ruffed grouse	Archibald 1976, Brewer 1980, Gullion 1984, Jackman and Scott 1975, Masson and Mace 1962, Maxson 1978
MEGA	5	wild turkey	Graves 1975, Harrison 1978, Jackman and Scott 1975, Sanderson and Schultz 1973
COVI	5	northern bobwhite	Klimstra and Roseberry 1975, Masson and Mace 1962, Stoddard 1931 and 1961
CACAL	5	California quail	Harrison 1978, Johnsgard 1973, Leopold 1977, Masson and Mace 1962
ORPI	5	mountain quail	Eaton 1975, Gutierrez 1955, Johnsgard 1973, Masson and Mace 1962
RALI	3	Virginia rail	Harrison 1978, Horak 1964, Reeves 1975, Zimmerman 1977
PORCA	3	sora	Harrison 1978, Odom 1977, Reeves 1975, Sanderson 1977
FUAM	3	American coot	Gullion 1954, Reeves 1975, Sanderson 1977
GRCA	3	sandhill crane	Drewien and Bizeau 1974, Harrison 1978, Reeves 1975, Walkinshaw 1949
PLSQ	5	black-bellied plover	Baker 1974, Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
PLDO	5	lesser golden-plover	Baker 1974, Eaton 1975, Harrison 1978, Johnston and MacFarlane 1967
CHAL	3	snowy plover	Eaton 1975, Harrison 1978, Page et al. 1979, Page and Peaslee 1977, Page and Stenzel 1979, Wilson 1980
CHSE	3	semipalmated plover	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967, Townsend 1929
CHVO	3	killdeer	Gerstenberg and Jurek 1972, Harrison 1978, Lenington and Mace 1975, Stout 1967
TRME	3	greater yellowlegs	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967, Zusi 1968
TRFL	3	lesser yellowlegs	Baker and Baker 1973, Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
TRSO	7	solitary sandpiper	Eaton 1975, Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
CASE	3	willet	Eaton 1975, Gerstenberg and Jurek 1972, Harrison 1978, Howe 1974, Stenzel et al. 1976
HEIN	3	wandering tattler	Harrison 1978, Murie 1956, Palmer 1967, Weeden 1965
ACMA	3	spotted sandpiper	Gerstenberg and Jurek 1972, Kuenzel and Wiegert 1973, Salo 1975, Stout 1967
NUPH	5	whimbrel	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
NUAM	3	long-billed curlew	Eaton 1975, Gerstenberg and Jurek 1972, Harrison 1978, Stenzel et al. 1976
LIFE	5	marbled godwit	Eaton 1975, Gerstenberg 1972, Harrison 1978, Luther 1968
AREIN	5	ruddy turnstone	Eaton 1975, Goss-Custard et al. 1977, Harrison 1978, Page et al. 1979, Palmer 1967

Letter code	Life form	Species common name	Selected references
BIRDS			
ARME	3	black turnstone	Gerstenberg 1972, Harrison 1978, Page et al. 1979, Palmer 1967
APVI	5	surfbird	Frisch 1978, Harrison 1978, Palmer 1967
CACANU	5	red knot	Goss-Custard et al. 1977, Harrison 1978, Prater 1972
CALAL	3	sanderling	Burger et al. 1977, Harrison 1978, Silliman et al. 1979
CALPU	3	semipalmated sandpiper	Alcorn 1978, Eaton 1975, Harrison 1978, Terres 1980
CAMAU	3	western sandpiper	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967, Terres 1980
CAMI	3	least sandpiper	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967, U.S. Department of the Interior 1979
CABA	5	Baird's sandpiper	Eaton 1975, Gerstenberg and Jurek 1972, Harrison 1978, Jehl 1979, Page 1978
CAMEL	5	pectoral sandpiper	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
CAAC	3	sharp-tailed sandpiper	Alcorn 1978, Eaton 1975, Harrison 1978, Sanderson 1977, Terres 1980
CAPT	3	rock sandpiper	Eaton 1975, Harrison 1978, Hubbs 1960, Palmer 1967
CAALP	3	dunlin	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
CAHI	3	stilt sandpiper	Alcorn 1978, Eaton 1975, Harrison 1978, Terres 1980
TRSU	3	buff-breasted sandpiper	Alcorn 1978, Eaton 1975, Harrison 1978, Terres 1980
LIGR	3	short-billed dowitcher	Burger et al. 1977, Harrison 1978, Palmer 1967
LISC	3	long-billed dowitcher	Gerstenberg and Jurek 1972, Harrison 1978, Stout 1967
GAGA	3	common snipe	Fogarty and Arnold 1977, Mason and MacDonald 1976, Reeves 1975
PHTR	3	Wilson's phalarope	Burger and Howe 1975, Gabrielson and Jewett 1970, Howe 1975, Johns 1969
PHLO	3	red-necked phalarope	Cole 1943, Harrison 1978, Hohn 1971, Stout 1967
PHALFU	3	red phalarope	Alderson 1961, Goosen and Busby 1979, Harrison 1978, Schamal and Tracy 1977
LAPI	3	Franklin's gull	Gabrielson and Jewett 1970, Harrison 1978, Jewett 1949
LAPH	3	Bonaparte's gull	Bent 1963a, Gabrielson and Jewett 1970, Harrison 1978
LAHE	3	Heermann's gull	Baltz and Morejohn 1977, Carlson 1974, Harrison 1978
LARCAN	3	mew gull	Baltz and Morejohn 1977, Guiguet 1974, Harrison 1978
LADE	3	ring-billed gull	Broadbooks 1961, Conover et al. 1979, Miller and Emlen 1975, Vermeer 1970
LACAL	3	California gull	Conover et al. 1979, Harrison 1978, Vermeer 1970, Wahl 1977
LAAR	3	herring gull	Baerends and Drent 1970, Eaton 1975, Harrison 1978, Parsons 1976
LATH	3	Thayer's gull	Alcorn 1978, Eaton 1975, Harrison 1978, Terres 1980
LAOC	3	western gull	Coulter 1975, Eaton 1975, Harrison 1978, Scott 1971
LAGL	3	glaucous-winged gull	Amlaner 1977, Eaton 1975, Harrison 1978, James-Veitch and Booth 1954, Scott 1971, Vermeer 1963
LAHY	3	glaucous gull	Alcorn 1978, Harrison 1978, Terres 1980
XESA	3	Sabine's gull	Chapman 1969, Harrison 1978, Wahl 1975
STERCA	3	Caspian tern	Baltz et al. 1979, Eaton 1975, Harrison 1978, Penlund 1976, Smith and Mudd 1978
STHI	3	common tern	Alcorn 1978, Baltz and Morejohn 1977, Harrison 1978, Terres 1980
STPA	3	Arctic tern	Harrison 1978, Hawksley 1957, Manuwal et al. 1979
STFO	3	Forster's tern	Bergman et al. 1970, Harrison 1978, McNicholl 1971, Salt and Willard 1971
CHNI	3	black tern	Bergman et al. 1970, Einarsen 1941, Gould 1974, Harrison 1978

Letter code	Life form	Species common name	Selected references
BIRDS			
BRMA	12	marbled murrelet	Binford et al. 1975, Eaton 1975, Harrison 1978, Sealy 1975
COLI	4	rock dove	Harrison 1978, Kindschy 1964, Murton et al. 1972
COFA	11	band-tailed pigeon	Blackman 1976, Braun et al. 1975, Eaton 1975, Jackman and Scott 1975, Wight et al. 1967
ZEMA	11	mourning dove	Cowan 1952, Harrison 1978, Nelson 1971, U.S. Department of the Interior 1962
TYAL	14	common barn owl	Guiguet 1978, Harrison 1978, Karalus and Eckert 1974, Marti 1974
OTKE	14	western screech-owl	Bowles 1917, Karalus and Eckert 1974, Van Camp and Henry 1975
BUVI	12	great horned owl	Karalus and Eckert 1974, Knight and Erickson 1977, Manuwal and Zarnowitz 1981
GLGN	14	northern pygmy-owl	Guiguet 1978, Harrison 1978, Karalus and Eckert 1974, Scott et al. 1977
ATCU	15	burrowing owl	Eaton 1975, Guiguet 1978, Karalus and Eckert 1974, Maser et al. 1971, Zarn 1974a
STOC	14	spotted owl	Call 1979, Forsman et al. 1984, Jackman and Scott 1975, Karalus and Eckert 1974, Scott et al. 1977
STVA	14	barred owl	Guiguet 1978, Harrison 1978, Nicholls and Warner 1972, Reichard 1974
ASOT	11	long-eared owl	Guiguet 1978, Harrison 1978, Karalus and Eckert 1974, Reynolds 1970
ASFL	5	short-eared owl	Clark 1975, Guiguet 1978, Karalus and Eckert 1974, Marti 1974
AEAC	14	northern saw-whet owl	Call 1979, Eaton 1975, Karalus and Eckert 1974, Scott et al. 1977
CHMI	6	common nighthawk	Armstrong 1965, Caccamise 1974, Harrison 1978, Trimble 1975b
PHNU	6	common poorwill	Gabrielson and Jewett 1970, Harrison 1978, Horn and Marshall 1975, Trimble 1975b
CYNI	4	black swift	Bent 1964a, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
CHVA	14	Vaux's swift	Baldwin and Hunter 1963, Baldwin and Zaczkowski 1963, Harrison 1978, Trimble 1975b
CAAN	7	Anna's hummingbird	Harrison 1978, Legg and Pitelka 1956, Pitelka 1951, Stiles 1973
STELCA	7	calliope hummingbird	Calder 1971 and 1973, Harrison 1978, Trimble 1975b
SERUF	11	rufous hummingbird	Gass 1974, Gass et al. 1976, Harrison 1978, Horvath 1964
SESA	7	Allen's hummingbird	Harrison 1978, Legg and Pitelka 1956, Pitelka 1951, Stiles 1972
CEAL	16	belted kingfisher	Hamas 1974, Kilham 1974, Salo 1975, Trimble 1975b
MELE	13	Lewis' woodpecker	Jackman 1975, Jackman and Scott 1975, Riebe and Orlins 1979, Scott et al. 1977
MEFO	13	acorn woodpecker	Gutierrez and Koenig 1978, Harrison 1978, MacRoberts 1970, MacRoberts and MacRoberts 1976
SPRU	13	red-breasted sapsucker	Erskine and McLaren 1972, Harrison 1978, Kilham 1971a, Rushmore 1973
SPHTH	13	Williamson's sapsucker	Bent 1964b, Crockett 1975, Harrison 1978, Michael 1935
PIPU	13	downy woodpecker	Jackson 1970, Kilham 1970, Manuwal and Zarnowitz 1981, Scott et al. 1977
PIVI	13	hairy woodpecker	Jackman 1975, Lynch 1978, Manuwal and Zarnowitz 1981, Riebe and Orlins 1979, Scott et al. 1977
PIAL	13	white-headed woodpecker	Gabrielson and Jewett 1970, Harrison 1978, Jackman and Scott 1975, Ligon 1973
PITR	13	three-toed woodpecker	Bock and Bock 1974, Jackman and Scott 1975, Riebe and Orlins 1979, Short 1974
PIAR	13	black-backed woodpecker	Bock and Bock 1974, Jackman 1975, Short 1974
COAU	13	northern flicker	Anderson 1972, Connor et al. 1975, Jackman and Scott 1975, Manuwal and Zarnowitz 1981
DRPI	13	pileated woodpecker	Bull 1978, Jackman 1975, Manuwal and Zarnowitz 1981, Riebe and Orlins 1979, Scott et al. 1977

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BIRDS			
COBO	10	olive-sided flycatcher	Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b, Tvrđik 1971
COSO	11	western wood pewee	Trimble 1975b, U.S. Department of Agriculture 1981b, Verbeek 1975
EMTR	7	willow flycatcher	Ashmole 1968, Ettinger and King 1980, Manuwal and Munger 1978, Robbins 1974
EMHA	11	Hammond's flycatcher	Beaver and Baldwin 1975, Harrison 1978, Johnson 1970, Manuwal 1970
EMOB	8	dusky flycatcher	Eckhardt 1977, Harrison 1978, Manuwal 1970, Trimble 1975b
EMDI	11	western flycatcher	Beaver and Baldwin 1975, Davis et al. 1963, Harrison 1978, Verbeek 1975
SANI	4	black phoebe	Harrison 1978, Oberlander 1939, Ohlendorf 1976, Verbeek 1975
SAYSA	4	Say's phoebe	Harrison 1978, Ohlendorf 1976, Trimble 1975b, Whitaker 1974
MYCI	14	ash-throated flycatcher	Gabrielson and Jewett 1970, Scott et al. 1977, Trimble 1975b
TYVE	11	western kingbird	Dick and Rising 1965, Harrison 1978, Ohlendorf 1974, Trimble 1975b
TYTY	7	eastern kingbird	Dick and Rising 1965, Harrison 1978, Ohlendorf 1974, Trimble 1975b
ERAL	5	horned lark	Beason and Franks 1974, Behle 1942, Trost 1972
PRSU	14	purple martin	Eaton 1975, Harrison 1978, Jackman and Scott 1975, Scott et al. 1977
TABI	14	tree swallow	Gabrielson and Jewett 1970, Sanderson et al. 1980, Scott et al. 1977, Stoeck 1970
TATH	14	violet-green swallow	Combella 1954, Harrison 1978, Scott et al. 1977, Trimble 1975b
STSE	16	northern rough-winged swallow	Gabrielson and Jewett 1970, Harrison 1978, Lunk 1962, Trimble 1975b
RIRI	16	bank swallow	Gaunt 1965, Harrison 1978, Petersen 1955
HIPY	4	cliff swallow	Behle 1976, Harrison 1978, Mayhew 1958, Samuel 1971
HIRU	4	barn swallow	Harrison 1978, Henny 1972, Samuel 1971, Snapp 1976
PECA	11	gray jay	Harrison 1978, Ouellet 1970, Rutter 1969
CYST	11	Steller's jay	Brown 1964a, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
APCO	7	scrub jay	Brown 1974, Harrison 1978, Ritter 1972
NUCO	10	Clark's nutcracker	Harrison 1978, Mewaldt 1956, Tomback 1977, Trimble 1975b
PIPI	7	black-billed magpie	Erpino 1968, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
COBR	11	American crow	Harrison 1978, Johnston 1961, Platt 1956, Trimble 1975b
CORCO	4	common raven	Harlow 1975, Harrison 1978, Hooper 1977, Trimble 1975b
PAAT	14	black-capped chickadee	Henny 1972, Scott et al. 1977, Smith 1974b, Sturnam 1976
PAGA	14	mountain chickadee	Harrison 1978, Kluyver 1961, Manolis 1977, Martin 1970, Trimble 1975b
PARU	14	chestnut-backed chickadee	Manuwal and Zarnowitz 1981, Meslow and Wight 1975, Scott et al. 1977, Stiles 1980
PAIN	14	plain titmouse	Dixon 1949, 1954, and 1956, Harrison 1978
PSMI	8	bushtit	Ervin 1974, Harrison 1978, Trimble 1975b
SITCA	13	red-breasted nuthatch	Anderson 1976b, Harrison 1978, Kilham 1973, Scott et al. 1977
SICAR	13	white-breasted nuthatch	Harrison 1978, Kilham 1968, 1971b, and 1972
SIPY	13	pygmy nuthatch	Bock 1969, Harrison 1978, Knorr 1957, Norris 1958
CEAM	14	brown creeper	Bent 1964c, McClelland 1975, Scott et al. 1977
SAOB	4	rock wren	Harrison 1978, Kroodsma 1975, Tramontano 1964, Trimble 1975b
CATME	4	canyon wren	Gabrielson and Jewett 1970, Harrison 1978, Tramontano 1964, Trimble 1975b
THBE	14	Bewick's wren	Harrison 1978, Kroodsma 1973, Root 1969b, Scott et al. 1977

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BIRDS			
TRAE	14	house wren	Harrison 1978, Kroodsma 1973, Scott et al. 1977, Trimble 1975b
TRTR	14	winter wren	Armstrong 1956, Cody and Cody 1972, Harrison 1978, Scott et al. 1977
CIPA	8	marsh wren	Verner and Engelsen 1970, Verner 1965 and 1975, Welter 1935
CIME	3	American dipper	Parsons 1975, Price and Bock 1973, Thut 1970, Udvardy 1977
RESA	10	golden-crowned kinglet	Bent 1964d, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
RECA	10	ruby-crowned kinglet	Harrison 1978, Morse 1970, Rea 1970, Trimble 1975b
POLCA	11	blue-gray gnatcatcher	Harrison 1978, Root 1967 and 1969a
SIME	14	western bluebird	Harrison 1978, Jackman and Scott 1975, Pinkowski and Zeleny 1975, Scott et al. 1977
SICU	14	mountain bluebird	Bent 1964d, Harrison 1978, Jackman and Scott 1975, Power 1966
MYTO	6	Townsend's solitaire	Harrison 1978, Lederer 1977, Salomonson and Balda 1977, Trimble 1975b
CAUS	7	Swainson's thrush	Bond 1963b, Gabrielson and Jewett 1970, Meslow and Wight 1975, Sanderson et al. 1980
CAGU	7	hermit thrush	Harrison 1978, Morse 1972, Sealy 1974, Trimble 1975b
TUMI	11	American robin	Harrison 1978, Henny 1972, James and Shugart 1974, Knupp et al. 1977
IXNA	11	varied thrush	Bent 1964d, Harrison 1978, Martin 1970, Trimble 1975b
CHFA	8	wrentit	Erickson 1938, Harris and Harris 1979, Harrison 1978
ANSP	5	water pipit	Braun 1980, Trimble 1975b, Verbeek 1970
BOGA	10	Bohemian waxwing	Bent 1965a, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
BOCE	9	cedar waxwing	Burleigh 1963, Gabrielson and Jewett 1970, Putnam 1949, Rothstein 1971
LAEX	7	northern shrike	Cade 1962 and 1967, Davis 1974, Harrison 1978
LALU	7	loggerhead shrike	Harrison 1978, Porter et al. 1975, Smith 1973a and 1973b
STVU	14	European starling	Bray et al. 1975, Grabill 1977, Harrison 1978, Scott et al. 1977
VISO	11	solitary vireo	Hamilton 1962, Harrison 1978, James 1973 and 1978
VIHU	11	Hutton's vireo	Bent 1965a, Hamilton 1962, Harrison 1978, Root 1967
VIGI	11	warbling vireo	Hamilton 1962, Harrison 1978, James 1976, Trimble 1975b
VIOL	11	red-eyed vireo	Harrison 1978, Lawrence 1953, Lemon 1971, Williamson 1971
VECE	6	orange-crowned warbler	Bent 1963b, Ficken and Ficken 1962, Griscom and Sprunt 1957, Harrison 1978
VERU	6	Nashville warbler	Johnson 1976, Lawrence 1948, Mengel 1964, Trimble 1975b
DEPE	8	yellow warbler	Ficken and Ficken 1965, Frydendall 1967, Griscom and Sprunt 1957, Harrison 1978
DENCO	10	yellow-rumped warbler	Griscom and Sprunt 1957, Harrison 1978, Hubbard 1969, Trimble 1975b
DENI	10	black-throated gray warbler	Evenden 1949, Griscom and Sprunt 1957, Harrison 1978, Trimble 1975b
DETO	10	Townsend's warbler	Griscom and Sprunt 1957, Harrison 1978, Mengel 1964, Trimble 1975b
DEOC	10	hermit warbler	Bent 1963b, Griscom and Sprunt 1957, Harrison 1978, Wiens and Nussbaum 1975
OPTO	8	MacGillivray's warbler	Griscom and Sprunt 1957, Harrison 1978, Mengel 1964, Trimble 1975b
GETR	3	common yellowthroat	Behle 1950, Griscom and Sprunt 1957, Harrison 1978, Stewart 1953
WIPU	6	Wilson's warbler	Griscom and Sprunt 1957, Harrison 1978, Stewart and Darling 1972
ICVI	8	yellow-breasted chat	Dennis 1958, Griscom and Sprunt 1957, Harrison 1978, Thompson and Nolan 1973
PILU	10	western tanager	Anderson 1972, Gabrielson and Jewett 1970, Trimble 1975b, Wiens and Nussbaum 1975

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BIRDS			
PHME	9	black-headed grosbeak	Harrison 1978, Kroodsma 1974, Trimble 1975b, Weston 1947
PAAMO	7	lazuli bunting	Emlen et al. 1975, Gabrielson and Jewett 1970, Thompson 1976, Trimble 1975b
PICH	7	green-tailed towhee	Bent 1968a, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
PIER	7	rufous-sided towhee	Bent 1968a, Davis 1960, Harrison 1978, Roberts 1969
PIFU	7	brown towhee	Bent 1968b, Davis 1951, Harrison 1978, Marcot 1979b
SPPA	11	chipping sparrow	Bent 1968b, Harrison 1978, Hebrand 1974, Trimble 1975b
POOGR	5	vesper sparrow	Best 1972, Harrison 1978, Ohmart and Smith 1971, Trimble 1975b
CHGR	5	lark sparrow	Bent 1968b, Gabrielson and Jewett 1970, Harrison 1978, Trimble 1975b
PASA	5	Savannah sparrow	Bradley 1973, Harrison 1978, Norris 1960, Welsh 1975
AMSA	5	grasshopper sparrow	Bent 1968b, Harrison 1978, Smith 1963, Trimble 1975b
PAIL	7	fox sparrow	Bent 1968c, Eaton 1975, Gabrielson and Jewett 1970, Trimble 1975b
MELME	7	song sparrow	Bent 1968c, Eaton 1975, Knapton and Krebs 1974, Tompa 1962
MELI	6	Lincoln's sparrow	Bent 1968c, Harrison 1978, Miller 1939, Trimble 1975b
ZOAT	5	golden-crowned sparrow	Davis 1973, Gabrielson and Jewett 1970, Rees 1973, Trimble 1975b
ZOLE	7	white-crowned sparrow	Lewis 1975, Morton et al. 1972, Ralph and Pearson 1971, Rees 1973
JUHY	5	dark-eyed junco	Davis 1973, Gottfried and Franks 1975, Harrison 1978, White 1973
AGPH	7	red-winged blackbird	Dolbeer 1976, Gabrielson and Jewett 1970, Holm 1973, Payne 1969
AGTR	7	tricolored blackbird	Dehaven et al. 1975, Harrison 1978, Payne 1969
STUNE	5	western meadowlark	Falls and Krebs 1975, Harrison 1978, Lanyon 1957, Pierce 1974
XAXA	7	yellow-headed blackbird	Harrison 1978, Verner 1975, Willson and Orians 1964, Willson 1966
EUCY	7	Brewer's blackbird	Harrison 1978, Orians and Horn 1969, Stepney 1975, Williams 1952
MOAT	7	brown-headed cowbird	Friedmann et al. 1977, Harrison 1978, Norman and Robertson 1975, Payne 1965
ICGA	9	northern oriole	Bent 1965b, Browning 1975a, Harrison 1978, Trimble 1975b
LEUAR	4	rosy finch	Harrison 1978, Johnston 1975, King and Wales 1964, Trimble 1975b
PIEN	11	pine grosbeak	Bent 1968a, French 1954, Harrison 1978, Trimble 1975b
CARPU	11	purple finch	Harrison 1978, Pulliam and Enders 1971, Salt 1952, Trimble 1975b
CACAS	11	Cassin's finch	Harrison 1978, Herman 1971, Samson 1976, Trimble 1975b
CARME	9	house finch	Evenden 1957, Harrison 1978, Salt 1952, Trimble 1975b
LOXCU	10	red crossbill	Gabrielson and Jewett 1970, Griscom 1937, Meslow and Wight 1975, Mould 1974
LOLE	10	white-winged crossbill	Bent 1968a, Harrison 1978, Trimble 1975b
CAFL	11	common redpoll	Alcorn 1978, Harrison 1978, Terres 1980
CAPI	11	pine siskin	Bent 1968a, Gashwiler and Ward 1966, Harrison 1978, Trimble 1975b
CAPS	7	lesser goldfinch	Coutlee 1968a and 1968b, Trimble 1975b
CATR	8	American goldfinch	Harrison 1978, Stokes 1950, Trimble 1975b, Wiseman 1975
COVE	11	evening grosbeak	Harrison 1978, Parks and Parks 1963, Trimble 1975b, Wiens and Nussbaum 1975

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MAMMALS			
DIVI	5	Virginia opossum	Hopkins and Forbes 1979 and 1980, McManus 1974
SOBE	16	Pacific water shrew	Maser and Hooven 1974, Pattie 1973, Whitaker and Maser 1976
SOCI	15	masked shrew	Getz 1961, Larrison 1970
SOMO	15	dusky shrew	Hawes 1975 and 1977, Ingles 1960, Terry 1974
SOPAC	15	Pacific shrew	Maser and Hooven 1974, Whitaker and Maser 1976
SOPAL	16	water shrew	Conaway 1952, Sorenson 1962, Spencer and Pettus 1966
SOTRO	15	Trowbridge's shrew	Gashwiler 1976b, Jameson 1955, Maser et al. 1981
SOVA	15	vagrant shrew	Eisenberg 1964, Hawes 1975 and 1977, Hooven et al. 1975, Terry 1978
NEGI	15	shrew-mole	Dalquest and Orcutt 1942, Maser et al. 1981, Terry 1974
SCLA	15	broad-footed mole	Marcot 1979c, Storer and Usinger 1971, Verner and Boss 1980
SCOR	15	coast mole	Glendenning 1959, Maser et al. 1981, Moore 1933, Witaker et al. 1979
SCTO	15	Townsend's mole	Giger 1973, Maser et al. 1981, Pederson 1963
ANPA	4	pallid bat	Barbour and Davis 1969, Orr 1954, O'Shea and Vaughan 1977, Vaughan and O'Shea 1976
EPFU	14	big brown bat	Barbour and Davis 1969, Kunz 1974, Mills et al. 1975
LANO	14	silver-haired bat	Barbour and Davis 1969, Maser et al. 1981, Reith 1980, Whitaker et al. 1977
LACI	11	hoary bat	Barbour and Davis 1969, Constantine 1966, Findley and Jones 1964, Maser et al. 1981
MYOCA	14	California myotis	Barbour and Davis 1969, Krutzsch 1954b, Maser et al. 1981
MYEV	14	long-eared myotis	Barbour and Davis 1969, Ingles 1965, Maser et al. 1981
MYKE	14	Keen's myotis	Barbour and Davis 1969, Mumford and Cope 1964
MYLU	14	little brown myotis	Barbour and Davis 1969, Maser et al. 1981, O'Farrel and Studier 1975
MYTH	14	fringed myotis	Barbour and Davis 1969, O'Farrel and Studier 1973 and 1980
MYVO	14	long-legged myotis	Barbour and Davis 1969, Black 1974, Maser et al. 1981
MYYU	14	Yuma myotis	Barbour and Davis 1969, Dalquest 1947, Maser et al. 1981
PLTO	4	Townsend's big-eared bat	Barbour and Davis 1969, Humphrey and Kunz 1976, Maser et al. 1981
TABR	4	Brazilian free-tailed bat	Barbour and Davis 1969, Humphrey 1971, LaVal 1973
CALAT	15	coyote	Knowlton 1972, Maser et al. 1981, Murie 1940
CANLU	15	gray wolf	Mech 1970, Mech and Frenzel 1971, Pimlott 1975, Scott and Shackleton 1980, Van Ballenberghe et al. 1975
URCI	15	gray fox	Maser et al. 1981, Sullivan 1956, Trapp and Hallberg 1975
VUVU	15	red fox	Ables 1975, Maser et al. 1981, Storm et al. 1976
URAM	15	black bear	Jonkel and Cowan 1971, Piekielek and Burton 1975, Poelker and Hartwell 1973
URAR	15	grizzly bear	Craighead and Craighead 1975, Jonkel 1978, Pearson 1975, Stirling et al. 1976
BAAS	4	ringtail	Maser et al. 1981, Taylor 1954
PRLO	14	raccoon	Dorney 1954, Maser et al. 1981, Urban 1970
GUGU	5	wolverine	Hornocker and Hash 1981, Koehler et al. 1980, Rausch and Pearson 1972, Wright and Rausch 1955
LUCA	16	river otter	Liers 1951, Maser et al. 1981, Tabor 1974, Toweill 1974
MAAM	14	marten	Francis and Stephenson 1972, Ingram 1973, Koehler 1975, Koehler et al. 1975
MAPE	14	fisher	Ingram 1973, Maser et al. 1981

Letter code	Life form	Species common name	Selected references
MAMMALS			
MEMEP	15	striped skunk	Bailey 1971, Maser et al. 1981, Verts 1967
MUER	15	ermine	Hall 1951, Maser et al. 1981
MUFR	15	long-tailed weasel	Hall 1951, Maser et al. 1981, Quick 1951
MUVI	14	mink	Mace 1970, Maser et al. 1981, Mitchell 1961
SPPU	15	spotted skunk	Crabb 1948, Maser et al. 1981
TATA	15	badger	Lindzey 1971 and 1978, Sargeant and Warner 1972
FECO	4	mountain lion	Hornocker 1969 and 1970, Robinette et al. 1961, Seidensticker et al. 1973
LYCA	5	lynx	Berrie 1973, Brand et al. 1976, Koehler et al. 1979, Nellis et al. 1972
LYRU	4	bobcat	Bailey 1972 and 1974, Maser et al. 1981, Nussbaum and Maser 1975
PHVI	3	harbor seal	Beach et al. 1981, Everitt 1980, Johnson and Jeffries 1983, Newby 1971
CEEL	5	elk	Boyd 1978, Harper 1971, Harper et al. 1967, Lemos 1971, Thomas and Toweill 1982
ODHE	5	mule deer and black-tailed deer	Brown 1961, Dasmann and Tabor 1956, Hines 1973, Wallmo 1981
ODVILE	5	Columbian white-tailed deer	Davison 1979, Gavin 1979, Smith 1982, Suring and Vohs 1979
ORAM	4	mountain goat	Brandborg 1955, Hibbs et al. 1969, Olmsted 1978, Rideout 1978
APRU	15	mountain beaver	Hooven 1977, Johnson 1971, Maser et al. 1981
GLSA	14	northern flying squirrel	Booth 1946, MacClintock 1970, Maser et al. 1981
MACA	4	hoary marmot	Barash 1974, Hanley and Tabor 1979, Ingles 1965, Taulman 1975
MAFL	4	yellow-bellied marmot	Armitage 1974, Armitage and Downhower 1974, MacClintock 1970
MAOL	4	Olympic marmot	Barash 1974, Beltz and Booth 1952, Cowan and Guiguet 1956, Wood 1973
SCI GR	10	western gray squirrel	Ingles 1965, MacClintock 1970, Maser et al. 1981
SPBEE	15	California ground squirrel	Fitch 1948a, Linsdale 1946, Maser et al. 1981
SPLA	15	golden-mantled ground squirrel	MacClintock 1970, McKeever 1964, Wirtz 1961
SPSA	15	Cascade golden-mantled ground squirrel	Dalquest 1948, Cowan and Guiguet 1956, Burt and Grossenheider 1976
TAAM	15	yellow-pine chipmunk	Broadbooks 1958 and 1970, MacClintock 1970, Meredith 1976
TASI	15	Siskiyou chipmunk	Gashwiler 1976a, Maser et al. 1981, Sutton and Nadler 1974
TATO	15	Townsend's chipmunk	Gashwiler 1976a, MacClintock 1970, Maser et al. 1981, Meredith 1972
TADO	10	Douglas squirrel	Fisch and Dimock 1978, MacClintock 1970, Maser et al. 1981
THBO	15	Botta's pocket gopher	Miller 1964, Vaughan 1963
THBU	15	Camas pocket gopher	Ingles 1965, Scheffer 1938
THMA	15	western pocket gopher	Burton and Black 1978, Lidicker 1971, Maser et al. 1981
THTA	15	northern pocket gopher	Anderson 1976a, Hansen and Beck 1968, Hansen and Remmenga 1961
DIHE	15	Heermann's kangaroo rat	Eisenberg 1963, Fitch 1948b, Quast 1954
PEPA	15	Great Basin pocket mouse	Hedlund et al. 1975, Kritzman 1974, O'Farrell et al. 1975
CASCAN	16	beaver	Aleksiuk 1968, Aleksiuk and Cowan 1969, Hall 1960
NECI	5	bushy-tailed woodrat	Jackson 1961, Maser et al. 1981
NEFU	5	dusky-footed woodrat	Linsdale and Tevis 1951, Maser et al. 1981
PEMA	15	deer mouse	Douglas 1969, Gashwiler 1971, King 1968, Maser et al. 1981
PETRU	4	piñon mouse	Douglas 1969, Ingles 1965
REME	15	western harvest mouse	Brummel 1961, Ingles 1965, Whitaker and Mumford 1972

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MAMMALS			
ARBAL	15	white-footed vole	Maser 1966, Maser and Johnson 1967, Maser and Storm 1970, Maser et al. 1981
ARLO	10	red tree vole	Maser 1966, Maser and Storm 1970, Maser et al. 1981
CLCA	15	western red-backed vole	Macnab and Dirks 1941, Maser and Storm 1970, Maser et al. 1981
CLGA	15	Southern red-backed vole	Jackson 1961, Maser and Storm 1970
MICAL	15	California vole	Batzli and Pitelka 1970 and 1971, Maser and Storm 1970
MICAN	15	gray-tailed vole	Maser 1966, Maser and Storm 1970, Maser et al. 1981
MILO	15	long-tailed vole	Maser and Storm 1970, Maser et al. 1981
MIMO	15	montane vole	Maser and Storm 1970, Murie 1971, Neider 1963
MIOR	15	creeping vole	Gashwiler 1972, Maser and Storm 1970, Maser et al. 1981, Sheehan 1978
MIRI	15	water vole	Anderson et al. 1976, Maser and Storm 1970, Maser and Hooven 1970
MITO	15	Townsend's vole	Goertz 1964, Maser and Storm 1970, Maser et al. 1981
ONZI	16	muskrat	Errington 1963, Maser et al. 1981, Sather 1958
PHIN	15	heather vole	Edwards 1955, Foster 1961, Maser and Storm 1970
SYBO	15	northern bog lemming	Larrison 1970, Layser and Burke 1973, Maser and Storm 1970
MUMU	15	house mouse	Berry 1970, Maser et al. 1981, Schwarz and Schwarz 1943
RANO	15	Norway rat	Calhoun 1963, Maser et al. 1981
RARA	5	black rat	Maser et al. 1981
ZAPR	3	western jumping mouse	Brown 1970, Clark 1971, Jones et al. 1978
ZATR	3	Pacific jumping mouse	Jones et al. 1978, Krutzsch 1954a, Maser et al. 1981
ERDO	6	porupine	Costello 1966, Maser et al. 1981, Smith 1979, Woods 1973
MYCO	16	nutria	Evans 1970, Larrison 1943, Maser et al. 1981
OCPR	4	pika	Broadbooks 1965, Johnson 1967, Smith 1974a
LEAM	5	snowshoe hare	Black 1965, Dolbeer and Clark 1975, Maser et al. 1981
LECA	5	black-tailed jack rabbit	Gross et al. 1974, Haskell and Reynolds 1947
ORCU	15	European rabbit	Couch 1929, O'Farrell 1965, Stevens 1975
SYBA	5	brush rabbit	Chapman 1971, Maser et al. 1981, Verts and Carraway 1980
SYFL	15	eastern cottontail	Graf 1955, Tretheway and Verts 1971, Verts and Carraway 1981, Verts et al. 1972
SYNU	15	Nuttall's cottontail	McKay 1974, McKay and Verts 1978a and 1978b, Powers and Verts 1971
FISH			
LAAY	1-E	river lamprey	Hart 1973, Scott and Crossman 1973
LATR	1-E	Pacific lamprey	Hart 1973, Scott and Crossman 1973
SQAC	1-A	spiny dogfish	Hart 1973, Hempel 1979, Scott and Crossman 1973
ACME	1-G	green sturgeon	Hart 1973, Scott and Crossman 1973
ACTR	1-G	white sturgeon	Clemens and Wilby 1946, Hart 1973, Scott and Crossman 1973
ALSA	1-A	American shad	Clemens and Wilby 1946, Cummings and Schwartz 1971, Hart 1973, Scott and Crossman 1973
CLHA	1-E	Pacific herring	Chalmers and Sprout 1980, Forsberg et al. 1977, Hart 1973, Nagasaki 1958, Percy and Myers 1974, Rabin and Barnhart 1977
ONGO	1-E	pink salmon	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979

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FISH			
ONKE	1-E	chum salmon	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
ONKI	1-E	coho salmon	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
ONNE	1-E	sockeye salmon	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
ONTS	1-E	chinook salmon	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
SACL	1-E	cutthroat trout	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
SAGA	1-E	rainbow trout	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
SAMA	1-E	Dolly Varden	Hart 1973, Scott and Crossman 1973, Wydoski and Whitney 1979
ALEL	1-E	whitebait smelt	Hempel 1979, Scott and Crossman 1973
HYPR	1-E	surf smelt	Cummings and Schwartz 1971, Forsberg et al. 1977, Hart 1973, Penttila 1978
SPTHA	1-E	longfin smelt	Hart 1973, Scott and Crossman 1973
THPAC	1-E	eulachon	Cummings and Schwartz 1971, Hart 1973, Hart and McHugh 1946
RHOS	1-E	speckled dace	Hart 1973
RIBA	1-E	redside shiner	Hart 1973
CATMA	1-G	largescale sucker	Cummings and Schwartz 1971, Scott and Crossman 1973
AUFL	1-E	tube-snout	Bayer 1979, Cummings and Schwartz 1971, Hart 1973
GAAC	1-E	threespine stickleback	Clemens and Wilby 1946, Cummings and Schwartz 1971, Hart 1973
SYLE	1-C	bay pipefish	Bayer 1979, Clemens and Wilby 1946, Cummings and Schwartz 1971, Hart 1973
MOSA	1-A	striped bass	Hart 1973, McGie and Mullen 1979, Scott and Crossman 1973
PEFL	1-E	yellow perch	Hempel 1979, Scott and Crossman 1973
STVI	1-E	walleye	Scott and Crossman 1973
AMRH	1-C	redtail surfperch	Cummings and Schwartz 1971, Hart 1973, Hempel 1979, Roedel 1953, Scott and Crossman 1973
CYAG	1-C	shiner perch	Bayer 1979, Cummings and Schwartz 1971, Forsberg et al. 1977, Hart 1973, Hempel 1979, Roedel 1953
EMLA	1-C	striped seaperch	Cummings and Schwartz 1971, Gnose 1968, Hart 1973, Roedel 1953
HYAR	1-C	walleye surfperch	Clemens and Wilby 1946, Hempel 1979
PHFU	1-C	white seaperch	Cummings and Schwartz 1971, Hart 1973, Hempel 1979, Roedel 1953
RHVA	1-C	pile perch	Hart 1973, Hempel 1979
PHOR	1-G	saddleback gunnel	Bayer 1979, Forsberg et al. 1977, Hart 1973, Percy and Myers 1974
SEME	1-C	black rockfish	Hart 1973, Phillips 1964, Wingert and Miller 1979
COAL	1-G	coastrange sculpin	Bond 1963a, Patten 1971, Scott and Crossman 1973
COAS	1-G	prickly sculpin	Bond 1963a, Krejsa 1965, Misitano 1977, Percy and Myers 1974, Scott and Crossman 1973
ENBI	1-G	buffalo sculpin	Clemens and Wilby 1946, Hart 1973, Percy and Myers 1974
LEAR	1-G	Pacific staghorn sculpin	Hart 1973, Percy and Myers 1974
CISO	1-C	Pacific sanddab	Clemens and Wilby 1946, Haines 1976, Hart 1973
CIST	1-C	speckled sanddab	Haines 1976, Hart 1973
PAVE	1-C	English sole	Hart 1973, Hewitt 1980, Rosenberg 1980
PLST	1-C	starry flounder	Clemens and Wilby 1946, Haertel and Osterberg 1967, Hart 1973

Letter code	Life form	Species common name	Selected references
INVERTEBRATES			
WORMS			
PHAG	1-D	peanut worm	Giese and Pearse 1975, Proctor et al. 1980, Rudy and Rudy 1979
ENMU	1-H	segmented worm	Giese and Pearse 1975, Proctor et al. 1980, Rudy and Rudy 1979
PEGA	1-H	segmented worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Rudy and Rudy 1979
HAIM	1-G	scale worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Rudy and Rudy 1979
ETPA	1-C	paddle worm	Cole 1980, Fauchald and Jumars 1979, Hartman 1968, Smith and Carlton 1975
SYHY	1-C	worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975
NEVE	1-G	mussel worm	Cole 1980, Fauchald and Jumars 1979, Hartman 1968, Rudy and Rudy 1979
NEVI	1-C	mussel worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Ricketts and Calvin 1974
PLBI	1-C	mussel worm	Fauchald and Jumars 1979, Hartman 1968, MacGinitie and MacGinitie 1949, Rudy and Rudy 1979
GLAM	1-C	blood worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, MacGinitie and MacGinitie 1949
GLRO	1-C	blood worm	Cole 1980, Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968
NECA	1-C	sand worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Oglesby 1973
LUZO	1-C	slim worm	Fauchald and Jumars 1979, Hartman 1968, MacGinitie and MacGinitie 1949, Smith and Carlton 1975
NADE	1-C	worm	Cole 1980, Fauchald and Jumars 1979, Hartman 1968, Smith and Carlton 1975
SCPU	1-C	worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975
POBR	1-C	tube worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Rudy and Rudy 1979
STBE	1-C	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
THPA	1-D	worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
ARBR	1-C	worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Rudy and Rudy 1979
EUMU	1-C	blood worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Rudy and Rudy 1979
OPLI	1-C	worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
CACA	1-C	tube worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Ricketts and Calvin 1974
HEFI	1-C	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
MECA	1-C	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
NOTE	1-C	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
ABPA	1-H	lug worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Ricketts and Calvin 1974
SACE	1-D	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
AMMU	1-D	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
PIPA	1-B	tube worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Rudy and Rudy 1979

Letter code	Life form	Species common name	Selected references
WORMS			
SCIN	1-B	tube worm	Fauchald and Jumars 1979, Gavin and MacDonald 1977, Giese and Pearse 1975, Hartman 1968
SEVE	1-B	tube worm	Fauchald and Jumars 1979, Giese and Pearse 1975, Hartman 1968, Ricketts and Calvin 1974
MOLLUSCS			
CODI	1-C	finger limpet	Fritchman 1962, Morris et al. 1980, Rudy and Rudy 1979
LICO	1-G	Newcomb's littorine	Giese and Pearse 1975, Morris et al. 1980, Smith and Carlton 1975
LISC	1-G	periwinkle snail	Giese and Pearse 1979, Rudy and Rudy 1979, Smith and Carlton 1975
NULA	1-G	wrinkled purple snail	Giese and Pearse 1979, Morris et al. 1980, Ricketts and Calvin 1974
MYED	1-B	bay mussel	Harger 1968, Morris et al. 1980, Rudy and Rudy 1979
CHHAHE	1-A	pink scallop	Giese and Pearse 1979, Ricketts and Calvin 1974
OSLU	1-B	native oyster	Bardach et al. 1972, Galtsoff 1964, Loosanoff and Davis 1963
CRGI	1-B	Pacific oyster	Bardach et al. 1972, Galtsoff 1964, Loosanoff and Davis 1963, Quayle 1969
PRST	1-B	native littleneck clam	Fraser 1931, Kozloff 1976, Quayle and Bourne 1972
SAGI	1-B	butter clam	Goodwin et al. [no date], Kozloff 1976, Quayle and Bourne 1972
TAJA	1-B	Manila littleneck clam	Gaumer et al. 1973, Marriage 1958, Morris et al. 1980
TRTA	1-B	transennella clam	Kozloff 1976, Marriage 1958, Rudy and Rudy 1979
CLNU	1-B	cockle clam	Fraser 1931, Goodwin 1973a, Ratti 1978
TRCA	1-B	gaper clam	Dinnel 1971, Machell and DeMartini 1971, Morris et al. 1980
MABA	1-D	Baltic clam	Kozloff 1976, Morris et al. 1980, Rudy and Rudy 1979
MAINQ	1-D	macoma clam	MacGinitie and MacGinitie 1949, Morris et al. 1980, Rudy and Rudy 1979
MANA	1-D	bentnose clam	MacGinitie and MacGinitie 1949, Morris et al. 1980, Ricketts and Calvin 1974
CRCA	1-B	California soft-shelled clam	Fitch 1953, Goodwin 1973a, Hancock et al. 1979
MYAR	1-B	soft-shelled clam	Morris et al. 1980, Pfitzenmeyer 1965, Shaw 1965
PAGE	1-B	geoduck clam	Goodwin 1976, Goodwin 1973b, Goodwin et al. [no date], Morris et al. 1980
ZIPI	1-B	piddock clam	MacGinitie and MacGinitie 1949, Morris et al. 1980, Ricketts and Calvin 1974
CRUSTACEANS			
ACCL	1-A	copepod	Hebard 1966, Newell and Newell 1973, O'Connors 1974
ACLO	1-A	copepod	Cross 1964, Newell and Newell 1973, Zimmerman 1972
CAMA	1-A	copepod	Matson 1972, Peterson 1979, Peterson and Miller 1976
PAPA	1-A	copepod	Peterson 1979, Zimmerman 1972
BAGL	1-B	acorn barnacle	Johnson and Snook 1967, Rudy and Rudy 1979
NEME	1-A	opossum shrimp	Haertel and Osterberg 1967, Newell and Newell 1973
CUVU	1-G	cumacean	Higley and Holton 1975, King 1977
LEDU	1-G	tanaid	Morris et al. 1980, Rudy and Rudy 1979
LESA	1-G	tanaid	Morris et al. 1980, Rudy and Rudy 1979
IDRE	1-G	isopod	Morris et al. 1980, Rudy and Rudy 1979
IDWO	1-G	isopod	Morris et al. 1980, Ricketts and Calvin 1974
GNOR	1-G	isopod	Haertel and Osterberg 1967, Morris et al. 1980, Rudy and Rudy 1979

Letter code	Life form	Species common name	Selected references
CRUSTACEANS			
AMHU	1-G	amphipod	Morris et al. 1980, Newell and Newell 1973
COBR	1-G	amphipod	Haertel and Osterberg 1967, Higley and Holton 1975, Newell and Newell 1973
COSA	1-G	amphipod	Davis 1978, Higley and Holton 1975, Newell and Newell 1973
COSP	1-G	amphipod	Davis 1978, Haertel and Osterberg 1967, Higley and Holton 1975
EOCO	1-G	amphipod	Davis 1978, Gonor et al. 1979, Higley and Holton 1975
EOPU	1-G	amphipod	Bosworth 1976, Davis 1978, Gonor et al. 1979
EOES	1-G	amphipod	Bosworth 1976, Davis 1978, Gonor et al. 1979
CRFR	1-C	bay crangon	Haertel and Osterberg 1967, Krygier 1974, Schmitt 1921
PUGR	1-C	kelp crab	Morris et al. 1980, Ricketts and Calvin 1974, Rudy and Rudy 1979
CANMA	1-C	Dungeness crab	Buchanan 1970, Haertel and Osterberg 1967, Kozloff 1976, Lough 1975, Schmitt 1921
CAOR	1-C	Oregon cancer crab	Lough 1975, Morris et al. 1980
CAPR	1-C	red rock crab	Kozloff 1976, Morris et al. 1980, Ricketts and Calvin 1974, Rudy and Rudy 1979, Schmitt 1921
HENU	1-C	purple shore crab	Alspach 1967, Guin 1977, Rudy and Rudy 1979
HEOR	1-C	mud crab	Batie 1974, Guin 1977, Rudy and Rudy 1979, Schmitt 1921
CALCA	1-C	ghost shrimp	Hawkins 1971, Johnson 1980, MacGinitie 1934, McCrow 1972, Schmitt 1921
UPPU	1-C	mud shrimp	MacGinitie 1930, Morris et al. 1980, Schmitt 1921

Appendix

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English-Metric Conversion Factors ^{1/}

Length

1 millimeter (mm)	= 0.039 inch	1 inch (in)	= 2.540 centimeters
1 centimeter (cm)	= 0.394 inch	1 foot (ft)	= 0.305 meter
1 decimeter (dm)	= 3.937 inches	1 yard (yd)	= 0.914 meter
1 meter (m)	= 39.370 inches	1 mile (mi)	= 1609.3 meters
1 meter (m)	= 1.094 yards	1 mile (mi)	= 1.609 kilometers
1 kilometer (km)	= 0.621 mile		

Weight

1 gram (g)	= 0.035 ounce	1 ounce (oz)	= 28.349 grams
1 kilogram (kg)	= 2.205 pounds	1 pound (lb)	= 454 grams
1 metric ton (t)	= 1.1 tons	1 ton	= 0.907 metric ton

Area

1 hectare (ha)	= 2.47 acres	1 acre	= 0.405 hectare
1 square kilometer (km ²)	= 247 acres	1 square foot (ft ²)	= 0.093 square meter
1 square kilometer (km ²)	= 0.386 square mile	1 square yard (yd ²)	= 0.836 square meter
		1 square mile (mi ²)	= 259 hectares
		1 square mile (mi ²)	= 2.59 square kilometers

Volume

1 cubic meter (m ³)	= 35.315 cubic feet	1 cubic foot (ft ³)	= 0.028 cubic meter
		1 cubic yard (yd ³)	= 0.765 cubic meter

Liquid Measure

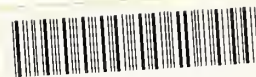
1 liter	= 1.057 quarts	1 quart (qt)	= 0.946 liter
1 liter	= 0.264 gallon	1 gallon (gal)	= 3.785 liters

Temperature

Fahrenheit (F)	Celsius (C)
32	0
40	4.4
45	7.2
50	10.0
55	12.8
60	15.6
65	18.3
70	21.1
75	23.9
80	26.7
85	29.4
90	32.2
95	35.0
100	37.8
(9/5°C + 32 = °F)	

^{1/} Approximate

Sources: Webster's New Collegiate Dictionary 1977.
Random House College Dictionary, Revised Edition, 1980.



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